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THE EARLY DIAGNOSIS OF SYPHILIS

A CORRELATION OF CLINICAL AND LABORATORY METHODS

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This paper is an analysis of 115 cases of genital chancres showing the correlation of the three methods at our disposal for making an early diagnosis of syphilis: dark-field examination, Wassermann reaction, and clinical evidence. The laboratory diagnosis alone of syphilis presents pitfalls. The dark-field examination is of paramount importance in the early diagnosis of an untreated chancre, but its usefulness is greatly lessened as the majority of genital lesions have been treated locally before the dark-field apparatus is resorted to.

The Wassermann reaction is indispensable in syphilis, but in later stages than the initial lesion. This reaction is most important in the differentiation of pathologic conditions simulating subsequent syphilitic lesions. A positive Wassermann reaction is the serologic expression of the generalization of the disease.

If a chancre is seen while the Wassermann reaction is not yet positive, it is not necessary to await its appearance. To await its appearance as corroborative diagnostic evidence is much like the obsolete procedure of awaiting the appearance of the secondary eruption. On the other hand, reliance on clinical evidence alone is insufficient, since chancres vary greatly in their clinical manifestations. Indeed, some chancres may be so atypical that reliance on laboratory tests becomes imperative in order to make a correct diagnosis. Although it is not possible to diagnose early all cases of genital chancres by any of the three methods, the proper correlation of these methods promulgates differential diagnosis of genital lesions.

The importance of the early institution of treatment in the cure of syphilis places the burden of proof on the physician who classes any genital lesion as nonsyphilitic. This diagnosis should not be made until all three diagnostic methods are negative.

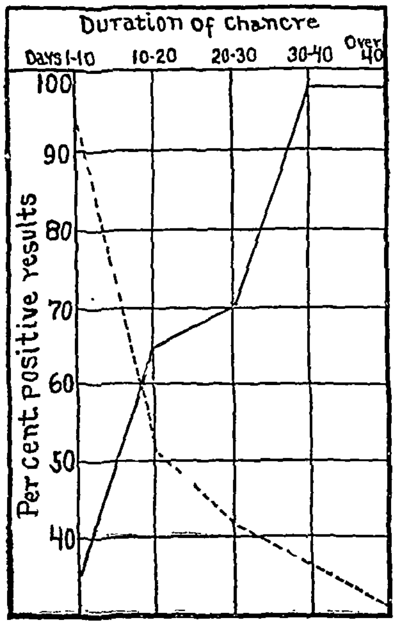

Fig. 1.—Comparison of Wassermann reaction and dark-field examination: solid line, positive Wassermann reaction; broken line, positive dark-field examination.

DARK-FIELD EXAMINATION

In an untreated and uninfected genital lesion, the absence of *Spirochaeta pallida* under the dark field is presumptive proof that the sore is not a chancre. A single negative finding, however, should never be taken as conclusive evidence, and the suspected lesion should *be reexamined at daily intervals. Unless the local condition* demands treatment, the genital lesion should be dressed only with physiologic sodium chlorid solution, boric solution, or simply warm water. No antiseptic treatment should be instituted until the diagnosis is established beyond a doubt. This is especially important because local treatment with a spirocheticidal drug greatly decreases the percentage of positive findings. The commonly used spirocheticidal drugs for local application are silver nitrate, mercury, iodin, copper sulphate, and iodoform. I have observed that spirochetes become very scanty on the surface of the chancre after one application of silver nitrate, which is the most powerful spirocheticide. The dark-field examination became negative almost universally after one application, although it was found that discontinuance of its use allowed a reappearance of the spirochetes on the surface. Two daily applications of calomel powder also caused the spirochetes to disappear from the secretion of the chancre. Here again they reappear if its use is discontinued. Daily rubs with 1 dram of unguentum hydrargyri are required for at least one week before the dark field becomes negative. It may be mentioned here that a single injection of arsphenamin usually causes spirochetes to disappear from the secretion of chancres within from six to eight hours. Infection of a chancre with pyogenic organisms may sometimes cause the spirochetes to disappear from the surface of the chancre, or reduce their number so that they can be demonstrated only with difficulty.

In previously treated chancres, the serum from the deepest part of the sore should always be examined, as it is unlikely that spirochetes will be found near the surface. When the dark-field examination is negative, the application of alcohol to the surface of a chancre may be of service by dilating the lymphatics and so bringing spirochetes to the surface of the lesion.

In Table 1 is shown the result of dark-field examination of 115 cases of genital chancres made at one to more than forty days after the first appearance of the sore. In thirty-three chancres examined within ten days of their appearance, the dark field was positive in thirty-one cases, or 93.9 per cent. In seventeen chancres examined *within from ten to twenty days* of their appearance, the dark field was positive in nine cases, or 52.9 per cent. In twenty chancres examined within from twenty to thirty days of their appearance, the dark field was positive in ten cases, or 50 per cent. In five chancres examined *within from thirty to forty* days of their appearance, the dark field was positive in three cases, or 60 per cent. The small number of cases in the last series probably explains the high percentage. In forty chancres examined after forty days of their appearance, the dark field was positive in twelve cases, or 30 per cent. The incidence of positive dark-field examinations became less in proportion to the duration of the chancre. Of the 115 chancres with an average duration of 33.4 days, sixty-five, or 57 per cent., were positive. This low percentage may in part be due to the fact that 66 per cent. of the chancres in this series had received local treatment previous to the time they were first seen. An added factor is the long average duration, as the longer the duration of the chancre, the more likely it is that its surface will heal. Furthermore, the possibility of a phimosis developing is greater. The sore is also more likely to have had local treatment, and finally pyogenic infection is more likely to be present.

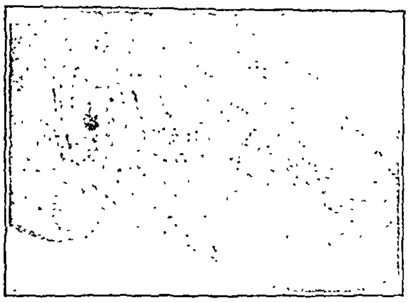

Fig. 2.—Abrasive chancre shaft: incubation, one month; duration, two days; self treated with iodin; dark field ++; Wassermann reaction —.

An added pitfall in absolute reliance on the use of the dark-field examination is apparent when it is noted that in 25.1 per cent. of the chancres in this series it was not possible to examine for spirochetes because the chancre was concealed beneath an inflamed or adherent foreskin, or the chancre's surface was entirely healed.

THE WASSERMANN REACTION

The value of the Wassermann reaction as an aid to the early diagnosis of syphilis is in proportion to the duration of the chancre. At the time of the first appearance of the sore, this reaction is invariably negative. The percentage of positive reactions gradually increases with the duration of the sore, until a short period before the appearance of the secondary eruption it becomes positive in 100 per cent. Therefore, in the early period of primary syphilis this reaction is not a very valuable diagnostic aid; in the later period, however, the reaction is of considerable diagnostic value. From an examination of Table 2 it is seen that within the first ten days of the appearance of the chancre, the Wassermann reaction was positive in only twelve of thirty-three cases, or 36 per cent. In seventeen cases from ten to twenty days after the appearance of the chancre, the Wassermann reaction was positive in eleven, or 64 per cent. In from twenty to thirty days the Wassermann reaction was positive in fourteen out of twenty cases, or 70 per cent. In the five cases from thirty to forty days after the onset of the sore, the Wassermann reaction was positive in all. In the forty cases existing over forty days, the reaction was positive in all. The average percentage of positive results obtained was 74.

TABLE 1.—DARK-FIELD EXAMINATION OF ONE HUNDRED AND FIFTEEN CHANCRES

Duration of Chancre in Days	Number of Cases	Dark-Field Examination		Local Treatment	Concealed Chancre Beneath Phimosis	Surface Healed	*Positive* Dark-Field Percentage
		Positive	Negative				
1-10	33	31	2	2	..	..	93.9
10-20	17	9	8	3	2	3	52.9
20-30	20	10	10	8	1	1	50.0
30-40	5	3	2	..	1	1	60.0
Over 40	40	12	28	8	10	10	30.0
Total......	115	65	50	21	29		57.3

TABLE 2.—THE WASSERMANN REACTION IN ONE HUNDRED AND FIFTEEN CASES OF PRIMARY SYPHILIS *

Duration of Chancre in Days	Number of Cases	Wassermann Reaction		Positive Wassermann Percentage
		Positive	Negative	
1-10	33	12	21	36.0
10-20	17	11	6	64.7
20-30	20	14	6	70.0
30-40	5	5	0	100.0
Over 40	40	40	0	100.0
Total cases......	115	82	33	74.1

* The Wassermann tests in this series were performed by Capt. Malcolm McBurney, M. C., U. S. Army, base hospital, Camp Upton, according to this technic: A one-quarter Wassermann was performed. The total volume in each test tube was 1.25 c.c., or one fourth of the amount used by Wassermann in the original test. Diagnostic tube: 0.05 c.c. of serum; one fourth of the anticomplementary dose of antigen; complement was titrated at every test; two units of complement were used with the alcoholic antigen and three units with the cholesterolized antigen; physiologic sodium chlorid solution was added up to 1.25 c.c. Control tube: 0.1 c.c. serum; complement according to titration; physiologic sodium chlorid solution was added up to 1.25 c.c.; incubated two hours on ice and one-half hour in the hot water bath at 37 C. Twenty-five hundredths c.c. of sheep's cells and 0.1 c.c. of amboceptor were added to each tube; these were incubated until controls were clear. One-tenth c.c. of amboceptor constituted two *hemolytic units.* The dilution of antigen used was 1:20.

It is not desirable that the Wassermann reaction be employed as a diagnostic aid in primary syphilis, because the appearance of this test probably means that a general invasion of the spirochetes has taken place. In experimental syphilis this is definitely known to be so. The disease should be diagnosed and treatment instituted before this invasion occurs. The time of appearance of a positive Wassermann reaction in primary syphilis is variable. Hence this test should be made in all cases of chancres.

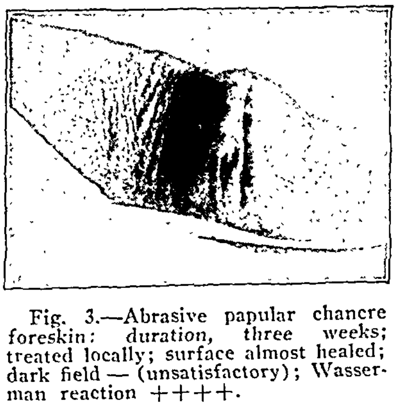

Fig. 3.—Abrasive papular chancre foreskin: duration, three weeks; treated locally; surface almost healed; dark field — (unsatisfactory); Wasserman reaction ++++.

The sooner the chancre is examined the more likely it is that the dark-field examination will be positive and the less likely that the Wassermann reaction will be positive. (Fig. 1). *Later, however, the converse is true.*

GENERAL CLINICAL FEATURES OF A CHANCRE

Before describing the clinical features that differentiate the chancre from other genital sores, it seems advisable to emphasize the need of a new terminology of nonsyphilitic infections. The vital importance of any genital lesion is the possibility of its being syphilitic. Once the lesion is proved to be nonsyphilitic it becomes relatively unimportant. Therefore the more general term of "nonsyphilitic" genital lesion is advocated lieu of the loosely applied term "soft chancre" or "chancroid." Venereal sores on the genitalia can be divided into three classes: (1) syphilitic, due to *Spirochaeta pallida;* (2) chancroidal, due to the Ducrey bacillus; (3) pyogenic, due to other organisms. A syphilitic genital lesion is a definite one due to a specific etiologic factor, *Spirochaeta pallida.* Thus diagnosis can be definitely made by demonstrating this organism by dark-field examination. Chancroidal infection is also specific, and is due to the bacillus of Ducrey. A genital sore should not be diagnosed as chancroid unless this bacillus can be demonstrated. This is possible only early in the existence of the sore. The other infectious genital sores may be due to various organisms that have not as yet been isolated. Differential diagnosis is often difficult and sometimes impossible if two or more of the above genital sores exist at the same time.

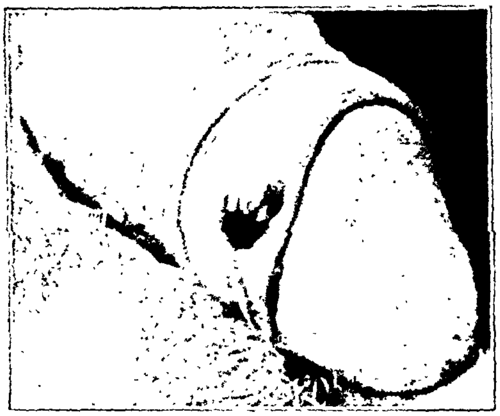

Fig. 4.—Abrasive indurated chancre foreskin: incubation, sixty days; duration, six days; untreated locally; dark field + + +; Wassermann reaction —. The surface was covered with a crust and sharply marginated; slight underlying induration.

Of late years in the diagnosis of syphilis the appearance of the chancre has been neglected. With the advance of laboratory methods of diagnosis there has been an unfortunate tendency to depend more on laboratory evidence than on clinical manifestation.

The nomenclature of the different types of chancres is as various as the textbooks on venereal diseases. The nomenclature employed in this paper is an attempt to clarify this subject.

GENERAL CONSIDERATIONS

Incubation Period.—Three weeks is usually given for the incubation period of a chancre. Our experience has led us to believe that in the majority of cases the incubation is between fourteen and forty-two days, with an average of about thirty-three days. The accepted minimum period is ten days and the maximum ninety days.

Multiplicity of the Sore.—The presence of more than one sore is no strong evidence against the lesion's being a chancre. Most textbooks give the impression that a chancre is rarely multiple. By an examination of Table 3, it is seen that of 121 chancres, twenty-one, or 17.3 per cent., were multiple.

Autoinfection.—A chancre is autoinoculable.[1] In man as well as experimentally in animals a second chancre can be produced by reinoculation from the original chancre. This possibility decreases in proportion to the duration of the infection.

Floor of Chancre.—The floor has the redness of raw beef. There is a considerable amount of serous secretion present. This liberal secretion is a very valuable diagnostic sign. This secretion may dry into a crust which, when removed, discloses the beefy floor. If pyogenic infection occurs, either an ulcer (Figs. 6 and 7) is formed or a membrane results (Fig. 5) and covers the surface of the sore. This membrane is usually "cream green" in color. The floor may remain abrased or it may become closed. This may occur spontaneously or more likely as a result of local treatment.

TABLE 3.—LOCATION OF LESIONS

Location of the Chancre	Number of Cases
Prepuce	55
Sulcus	20
Shaft	15
Glans	9
Frenum	4
Urethra	2
Concealed (phimosis)	16
Total	121
Mixed infection (chancroid and chancre)	3
Multiple chancres	21

Edge of Chancre.—The edge is usually flat and sharply demarcated from the surrounding tissues (Fig. 4). This is an important clinical feature. In another type of the lesion the slightly elevated border may slope toward the eroded center and into the normal tissue. As a result, usually of pyogenic infection, the edge may be raised above the surface of the sore (Fig. 7).

Area Surrounding Chancre.—Usually the tissue surrounding the chancre is normal (Fig. 4). In the event of secondary pyogenic infection, a small zone of inflammation may surround the edge (Fig. 5).

Induration.—When induration is present, it is valuable evidence of syphilis; but its absence does not exclude syphilis. This feature of a chancre is variable. The induration may appear early in the primary stage or late. The older the lesion, the more likely is the induration to be marked. The degree depends in a large measure on the location of the chancre. As the result of pyogenic infection, induration may become less or even disappear entirely.

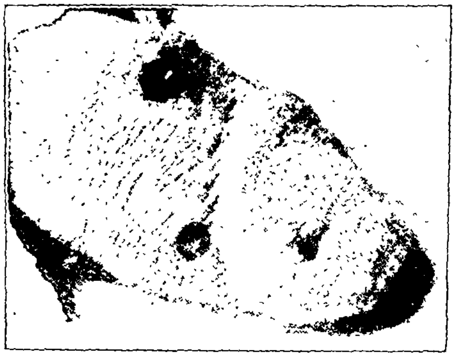

Fig. 5.—Infected abrasive chancre (multiple): incubation, six weeks; treated locally; duration, three weeks; dark field + +; Wassermann reaction + + + +. The floor was covered with a membrane "cream green" in color; the edges were on the level with the surrounding tissue; an area of inflammation surrounded the lesion; induration was absent.

Noninflammatory Edema.—When present, this edema is a valuable aid in diagnosis. It may involve the area surrounding the chancre, or the whole prepuce (Figs. 11 and 12). The skin is of a dull livid red or bluish tint. It feels tough and rubbery. The edema accompanying gonorrhea or a nonsyphilitic septic sore is softer when palpated and duller in color.

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[1] Klauder, J. V.: Superinfection in Syphilis, J. Cut. Dis. **36**: 515 (Nov.) 1918.

Adenopathy.—The majority of adult males have some enlargement of the superficial lymph nodes. Friedlander,[2] in an examination of definitely nonsyphilitic cases, found in 85 per cent. a bilateral inguinal enlargement. Moreover, it may be impossible to distinguish syphilitic enlargement of the inguinal nodes from an enlargement caused by any other venereal diseases. However, the presence of enlarged inguinal lymph nodes, followed by a general enlargement of the lymphatic nodes, is characteristic of syphilis. In about 5 per cent. of cases of primary syphilis there is no palpable change in the lymphatic nodes. In the presence of secondary pyogenic infection, however, it is common to find a suppurative adenitis.

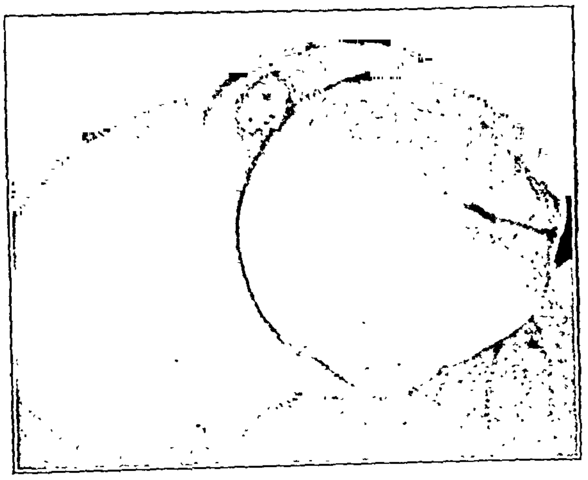

Fig. 6.—Ulcerated chancre foreskin (early): duration, three days; untreated locally; dark field ++; Wassermann reaction, alcoholic antigen —; cholesterized antigen ++++. The floor was ulcerative and dirty gray; the surrounding area of inflammation is shown in the illustration as a dark area; there was no induration; a localized area of edema surrounded the sore.

A nonsyphilitic genital lesion may be differentiated from a chancre. These sores start as a superficial ulcer and later become deep, or they may start as a pustule which breaks down and forms an ulcer. Such ulcers have gnawed, undermined edges. The floor is of a dirty gray, pitted and worm eaten in appearance. Later an area of inflammation surrounds the sore. Later the contour becomes irregular because, while one part of the ulcer tends to heal, the other invades the normal tissue. These nonsyphilitic sores are painful, bleed easily, and do not secrete serum so plentifully as do chancres.

The earliest clinical appearance of a genital chancre is a minute, sharply rounded, hyperemic area, which after a very short period becomes a superficial abrasion. This type of chancre is called the abrasive chancre (Fig. 2). It is usually seen only early, and is the first appreciable evidence of syphilitic infection. On account of the insignificant appearance of the sore it is most frequently undiagnosed. The surface is round, about 0.5 cm. or less in diameter, sharply marginated, smooth and polished. It appears exactly like an abrasion or excoriation because of shedding of the uppermost epithelial layer. The abrasive area enlarges and these changes take place: A secondary infection of its surface changes the sore into an ulcerative chancre (Figs. 6 and 7) or, if induration is present or subsequently develops, into an ulcerative, indurative chancre (Fig. 10). The ulcerative, nonindurative, orbicular chancre[3] (Fig. 8) is another type of ulcerative chancre. It is an atypical and rare chancre, occurring as a circular ulceration about the size of a penny; the floor is bright red with raised edges. Induration is notably absent. The characteristic beef-red floor suggested to Taylor the name "beefsteak" chancre. Infection of the surface of the chancre without ulceration is called infected abrasive (Fig. 5). If induration raises the sore above the level of the surrounding tissue, the surface remaining open, we have an abrasive papular chancre (Fig. 3). If the surface becomes closed, however, the sore is simply called a papular chancre. If induration appears below the level of the surrounding parts, an abrasive indurative chancre is formed (Fig. 9). A sore in which the induration spreads beneath and beyond its surface forming a thin disklike mass is called a parchment chancre.[4]

LOCATION OF GENITAL CHANCRES

The form of a genital chancre depends considerably on its location. The cellular reaction to the spirochete is modified by the tissue and the blood supply at the site of infection. The form of a chancre is also modified by extraneous factors, such as friction and infection. These in turn depend much on the location of the sore.

CHANCRE OF THE SHAFT

The majority of all sores seen on the shaft of the penis are syphilitic. The most commonly seen chancres in this location are abrasive, abrasive papular, and abrasive indurative types. In addition, the ulcerative nonindurative, orbicular chancre is usually seen only in this region. Chancres of the shaft, with the exception of the last type, become indurated early. Infection at this location is the exception.

CHANCRES OF THE PREPUCE

The roll of the prepuce just behind the corona, as is shown in Table 3, is the most frequent site not only for chancres but also for nonsyphilitic sores. There is no type of chancr characteristic for thi location. The frequently unclean stat of the prepuce, the absence of air, and th presence of moistur predispose to an earl infection. Hence clinical diagnosis ma be difficult (Figs. and 7). Induration i more likely to be present in chancres of th prepuce than in an other region of th penis. Induration i this location is mor easily estimated, as retraction of the prepuce pro duces a very characteristic appearance—the whol lesion flicks over like a plate turning on its edge. A the result of multiple chancres, induration may involv

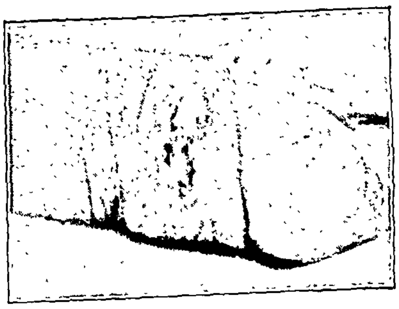

Fig. 7.—Ulcerative chancre foreskin (late): duration, fourteen days; untreated locally; dark field after many examinations was +; Wassermann reaction ++++. This sore was probably the result of pyogenic infection of an abrasive chancre; the floor was suppurative; at the center of the sore the edges were raised; slight induration was present.

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[2] Friedlander, D. J.: J. Cut. Dis. 30: 14 (Jan.) 1912.

[3] Pictures of this unusual type of chancre are shown in Powe and Murphy's System of Syphilis, Taylor's Genito-Urinary and Venere Diseases, and McDonagh's Biology and Treatment of Venereal Di eases. In the latter volume an excellent description of this type chancre is given.

[4] The so-called hunterian chancre refers not to any particular typ of chancre but to the character of induration. Such induration commonly seen in a chancre of the sulcus (Fig. 10).

the entire circumference of the penis behind the corona, producing what is known as "collar" induration. Here, as elsewhere, the only evidence of a chancre may be a cartilage-like mass under the intact skin—the papular chancre.

CHANCRES OF THE SULCUS

There are two types of ulcerative, indurative chancres most frequently seen in this location. In one type there is a small area of ulceration on the floor of the sulcus surrounded by a rounded area of induration which extends farther and is more marked on the preputial side than on that of the glans. This induration extends only slightly beyond the corona. This crescentic form of induration produces the characteristic "swallow's nest" appearance. In the other type the induration and the ulceration are often so extensive as to involve the entire side of the sulcus (Fig. 10). The sore is inflammatory and painful. The surface may be covered with a "cream green" membrane, and there is usually present a foul-smelling secretion. Some induration is almost always present in chancres of the sulcus. This induration is usually of a cartilaginous nature and is whitish, because of the fibrous tissue which constricts the blood vessels. When the prepuce is retracted, the sore springs suddenly into view in a typical manner.

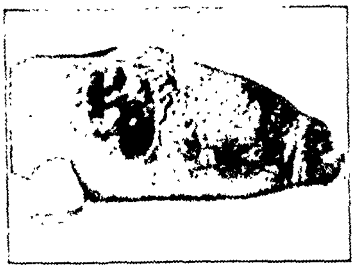
Fig. 8.—Ulcerative nonindurated orbicular chancre, treated locally with tincture of iodin; secondary eruption on body; dark field —; Wassermann reaction ++++. The floor was noninfected, beef red in color; the edges were raised; induration was absent.

CHANCRE OF THE GLANS

Two types of chancres are seen on the glans. One type is an abrasive chancre seen as a perfectly circular and sharply demarcated erosion (Fig. 9). The edges are flat and flush with the surrounding parts. Occasionally, however, the surface may be slightly below the level of the surrounding tissue. Early induration is absent; later, however, it is slight but is never marked. The second type of chancre is the abrasive papular, and is seen on the anterior part of the glans surrounding the meatus. This type is sharply circumscribed and slightly raised above the surrounding tissue. It appears as though the sore were stuck on the glans and then flattened out. The surface is usually crustaceous, and when the crust is removed the floor is bright red. This sore is more indurated than the first type.

CHANCRE OF THE FRENUM

The chancre may involve the base of the frenum or the entire frenum. Chancres of the base, when seen early, appear as abrasive, circular areas. The surface is either flush with the surrounding tissues or slightly depressed. Slight but never marked induration appears late in the course of the sore, and it is then seen as a small node about the size of a split pea. A chancre of the entire frenum is usually seen as a linear ulceration (Fig. 11) with a suppurative grayish-yellow floor, the edges of which are raised. Induration, if present, is only slight. Chancres of the frenum are frequently infected, and hence they appear as ulcerations. They therefore simulate nonsyphilitic sores.

INTRA-URETHRAL CHANCRE

In the majority of all cases of intra-urethral chancres a varying amount of the sore can be seen as a portion of it spreads over the edge of the meatus. This portion is a dull red, sharply circumscribed erosion, which, when infected, has a dirty gray surface. Induration is always present and can be easily felt by pressing the glans from above downward between the forefinger and thumb. When the chancre is wholly intra-urethral, the only objective evidence is induration. Slightly painful urination and a blood-tinged, serous discharge are accompanying symptoms of these chancres which not uncommonly lead to a wrong diagnosis of gonorrhea.

MIXED INFECTIONS (CHANCROID AND CHANCRE)

Simultaneously with the inoculation of syphilis, infection with a chancroid or pyogenic organism may occur. During the incubation period of the chancre, the accompanying nonsyphilitic sore remains unchanged. At the end of this period the clinical characteristics of the chancre appear. Induration raises the floor of the sore, and hence the raised and undermined edge disappears as the surface becomes flush with the surrounding parts. The dark-field examination may be positive. The Wassermann reaction is not positive at this time, but becomes so later. It is by reason of the possibility of mixed infection that every genital sore should be considered syphilitic until proved otherwise. Erosive and gangrenous balanitis is another infection which may occur simultaneously with a chancre. This infection is supposed to be caused by a symbiosis of a vibrio with *Spirochaeta balanitidis.* The lesion is seen in two forms, mild and severe. In the mild form, balanitis erosiva circinata, the lesion appears as whitish patches involving the sulcus, the roll of the prepuce or the glans. Phimosis rapidly develops as an essential factor, since these organisms are anaerobic. In the severe form the parts involved become ulcerative and gangrenous with subsequent sloughing. In the mucopurulent discharge from beneath the foreskin, the alleged causative agent, *Spirochaeta balanitidis,* can readily be demonstrated, although *Spirochaeta pallida* is also seen if a mixed infection is present. The two organisms are easily differentiated, as *Spirochaeta balanitidis* is coarser and moves with considerably more rapidity than *Spirochaeta pallida.* In stained preparations both the vibrio and the spirochete are seen.

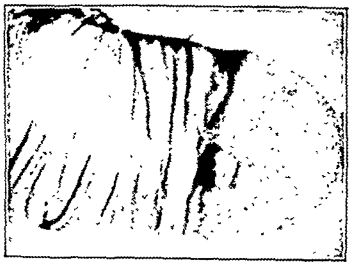
Fig. 9.—Abrasive orbicular chancre, glans: duration, three days; no previous local treatment; dark field +++; Wassermann reaction —. This sore was the size of a split pea, circular in outline; the floor was uninfected and red; the edges were a little below the level of the surrounding parts.

PHIMOSIS AS A COMPLICATION OF CHANCRE

This complication most commonly develops subsequent to chancres in the roll of the prepuce and in the sulcus. In the 121 chancres, phimosis was present in sixteen, or 13.2 per cent., whereas, in seventy-five cases of chancres occurring in sulcus and prepuce in this series, it was present in 61.3 per cent. As already mentioned, uncleanliness, the absence of air, and the presence of moisture predispose to a pyogenic infection and balanitis, which subsequently leads to a phimosis. An additional and sometimes the only etiologic factor is the widespread indurative infiltration of the lymphatics. A diagnosis in the presence of this complication may be made by inspection and palpation alone. The characteristic syphilitic edema of the entire foreskin is present, and in addition it is more swollen on the side on which the sore is present (Fig. 12). A localized indurative mass, or the "collar" form of induration, is palpable beneath the foreskin. A mucopurulent discharge is almost always present, and on this account the diagnosis of gonorrhea is frequently made. Syphilis is not suspected until the appearance of the secondary eruption. It is therefore important in cases of phimosis, venereal in origin, that the presence of a chancre beneath the foreskin be excluded. Occasionally in some of these cases the foreskin may be sufficiently retracted to expose partly the genital lesion for a dark-field examination. If this is not possible, the secretion from beneath the foreskin should be examined for the presence of spirochetes. If this examination is negative, the serum obtained from puncturing the inguinal lymph nodes should be examined.

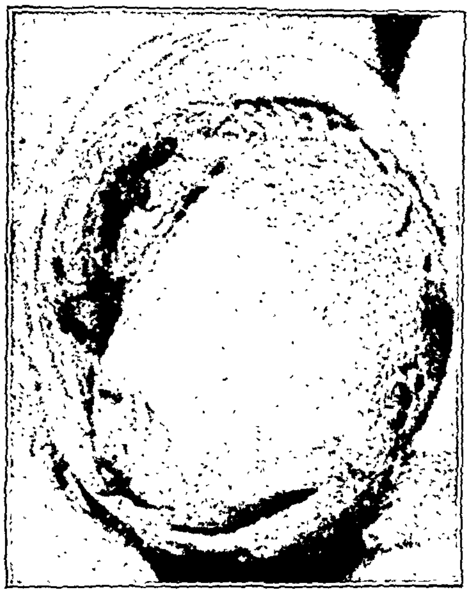

Fig. 10.—*Ulcerative, indurative chancre, sulcus: duration, one month; treated locally with silver nitrate; dark field +; Wassermann reaction ++++. Note the extensive area of infection and ulceration; the floor was covered with a foul-smelling, yellowish-green secretion; induration was present beneath the entire area; in addition, there was a raised and crescentic form of induration involving the right side of the prepuce just beyond the sulcus.*

COMMENT

In the proper treatment of any infectious disease with a specific drug or serum, the earlier the treatment is administered the greater is the prospect of cure. This is undoubtedly true in the treatment of one type of pneumonia with its specific serum, in malaria with the use of quinin, and in other diseases in which specific therapeusis is indicated. The proper treatment of syphilis is no exception to this fundamental principle. On this vital principle may depend the fate of the syphilitic. If this opportunity is lost his fate may "hang upon a thread," depending on the localization of the spirochetes in his body. It has been appropriately said that the syphilitic lives with the sword of Damocles suspended above his head. The necessity of early diagnosis and treatment should be deeply and indelibly engraved on the mind of every physician who has to deal with genital lesions. It is incumbent on the physician to remember that a short interval may exist between an apparently innocent genital lesion and a latent state of paresis. Every syphilitic in the early stage of his infection is a potential tabetic or paretic.

The obsolete separation of syphilis into three stages is possibly unjustified from a pathologic view. Our modern conception of the disease justifies the belief that there is no demarcation between the stages of the disease, and that infection becomes generalized within a few hours after inoculation, becoming more and more intense until the secondary eruption appears.

In the light of our modern knowledge of syphilis and the means at our disposal for early diagnosis and the valuable therapeutic agents at hand for treatment, it seems inconsistent and criminal that secondary eruptions of syphilis are so frequently seen. Yet, in this series of genital chancres the average duration of the chancre was 34.4 days, and a secondary eruption was present in 24.7 per cent. The time is at hand when a secondary eruption of syphilis should be a dermatologic rarity, and the occasion of such a diagnosis should imply carelessness on the part of the physician first seeing the patient for his failure to diagnose the chancre. The only excuse is to be found in the fact that patients with secondary syphilis commonly give the history of having had very recently a "chancroid" which was "burnt" with a silver nitrate stick before an opportunity was given to the physician for correct diagnosis. The question may therefore be appropriately asked, "Who first sees and treats the majority of patients with primary syphilis?" The answer usually is, "quacks," the corner druggist, and the physician who as a routine treats all genital lesions with silver nitrate, and who either entirely neglects the valuable means at hand to diagnose the syphilitic lesion, or is ignorant of these methods.

Local treatment of a chancre with a spirocheticidal drug interferes temporarily or permanently with finding the spirochetes by dark-field examination; hence such treatment prevents the early diagnosis of a chancre and consequently the institution of treatment. The common practice of treating genital sores locally with silver nitrate or other equally powerful spirocheticidal drug before they are properly diagnosed should be discouraged. A routine dark-field examination of every genital sore as a means to an early diagnosis should be the rule rather than the exception.

We cannot hope to make any considerable progress in the prevention of syphilis and the consequences of syphilis until two movements are carried out: first, the education of the public regarding the infection so that the individual with a genital lesion will go to a reputable physician, and second, the education of the medical profession concerning the available means to an early diagnosis of syphilis. As long as the use of the dark-field apparatus and the spinal puncture needle are ignored, just so long will syphilis and its manifold manifestations remain a scourge to humanity.

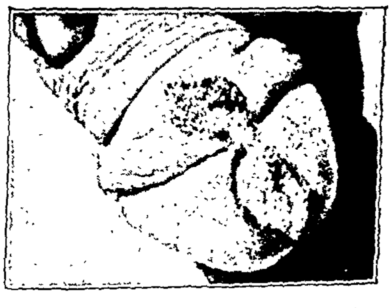

Fig. 11.—Ulcerative chancre of the frenum: duration, from fifteen to twenty days; previously treated with silver nitrate; dark field +++; Wassermann reaction +. The part of the sore involving the foreskin was clinically a chancre; the part involving the glans, however, presented the picture of a nonsyphilitic sore, except that its surface was freely secretive; induration was absent; note the edematous foreskin.

SUMMARY

To prevent the spread of syphilis and to insure a cure, it is imperative that the diagnosis be made at the earliest possible moment.

The average duration of the genital chancre in this series of 115 cases was 34.4 days. A secondary eruption of syphilis was present in 24.7 per cent. Local treatment had been applied to the chancre in 66 per cent.

The means at our disposal for the early diagnosis of syphilis are the dark-field apparatus, the Wassermann reaction, and clinical evidence.

A positive dark-field examination was obtained in 57.1 per cent. of this series. The shorter the period from the appearance of the chancre, the more likely it is that the dark-field examination will be positive. The converse is true with the Wassermann reaction. Therefore, the dark-field apparatus is not only the preferable laboratory test, but it is also more successful than the Wassermann reaction in the diagnosis of early syphilis.

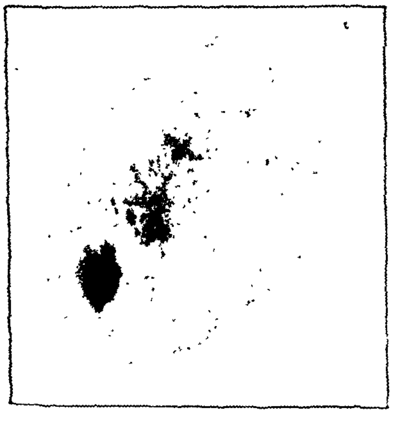

Fig. 12.—Concealed chancre, sulcus, phimosis: duration, from ten to fourteen days; treated locally; *dark field not possible*; Wassermann reaction —. The foreskin was edematous, markedly inflamed and adherent; there was a mucopurulent discharge, shown as a white streak in the illustration; a hard mass was palpable in *the right sulcus*, and visible as a raised portion (left side of illustration); on account of the urgency of the condition, arsphenamin was promptly given; after the acute condition subsided, the foreskin was retracted, and the indurated remains of a chancre were seen in the floor of the right sulcus.

The too common practice of treating genital chancres with a spirocheticidal drug before they are properly diagnosed may prevent or greatly delay the obtaining of a positive dark-field examination.

A positive Wassermann reaction was obtained in 74.1 per cent. of this series. This reaction in late primary syphilis is the most successful laboratory method for diagnosis.

Both laboratory tests were negative in 8.6 per cent. Therefore, by the use of both tests, 91.4 per cent. of the chancres in this series were diagnosed by laboratory methods alone. However, by the use of these tests alone, delay may be experienced before the spirochetes are found in the secretion from the chancre, or before the Wassermann reaction, if negative, becomes positive, or before the report of this test is obtained. Treatment is therefore delayed, and delay at this time may be fatal and may mean an involvement of the nervous system. Moreover, if a chancre is seen in the negative stage of a Wassermann reaction, and if the dark-field examination is negative, it is not ideal to await the appearance of a positive Wassermann reaction for diagnosis.

A definite clinical diagnosis of a genital chancre can often be made. If a genital sore is clinically a chancre, and if the dark-field examination and the Wassermann reaction are both negative, it is perhaps better to start intensive treatment rather than await the appearance of a positive Wassermann reaction.

Criminal Tendencies of the Defective.—We are able to predict that with the exception of the lightest grade cases of dementia praecox and the higher grades of the feebleminded, who make up the occasional criminal, hypermorons, that the others are all marked for slaughter; that they cannot adjust themselves to a normal environment.—Hickson.

A GROUP OF INTERESTING SYNDROMES RESULTING FROM MULTIPLE EMBOLI

OBSERVATIONS IN A CASE OF CHRONIC BACTERIAL ENDOCARDITIS

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The case that forms the basis of this paper is of importance, first, because of the polymorphism of symptomatology of a relatively common disease, endocarditis, and secondly, because the old clinical aphorism whereby one attempts to group most, if not all, of the symptoms of a given case under a common heading, is reemphasized.

REPORT OF CASE

History.—A white man, aged 42, whose family history was significant only in that his mother died of heart disease, had smallpox twenty-six years before he came to my attention. Six years after having smallpox he suffered from an undetermined disease, which, so far as he can remember, consisted of fever and cough. He apparently recovered from this and was well up to one year before I saw him, when he had an attack of what he terms the grip, which began with severe dyspnea (almost to the point of suffocation), necessitating the summoning of an ambulance and the administration of a hypodermic injection to relieve him. He then coughed and had fever, and the next night hemoptysis.

After three weeks there was an acute inflammatory condition of the right foot. Then there came a sudden pain in the right elbow, followed by an appreciable smallness of the pulse on that side. To put it in the patient's own words, "he felt that the throbbing of the arteries, which was present in both arms, had suddenly stopped on the right side."

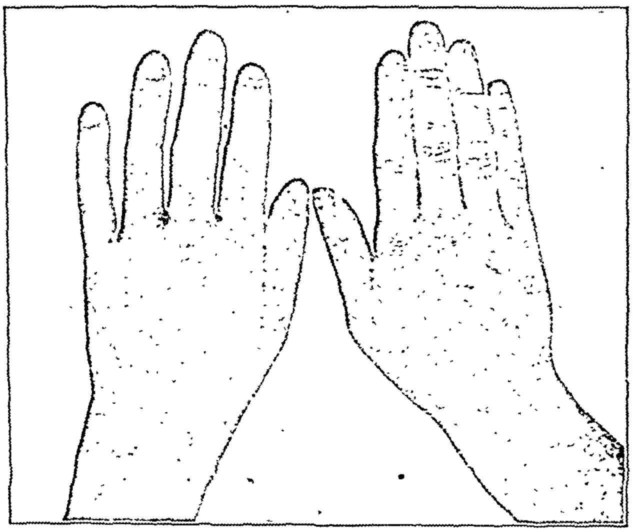

Fig. 1.—Edema and swelling of left hand.

Later he had a sudden attack of severe pain in the left knee that radiated up the thigh and down the leg, but there was no accompanying inflammatory condition of the knee joint proper. This condition gradually improved and he was fairly comfortable for a few months. But his well-being was not to be lasting, for he suddenly lost power in the left arm and left leg, and the angle of the mouth drooped on the *right side*. The latter fact was elicited by having the patient imitate the condition of facial contortion that existed at the time. Consciousness, however, was retained throughout the hemiplegic attack. In a few days he recovered power in his leg, but the arm was still weak. Two months later he noticed swelling of the hand and fingers of the paralyzed arm which, after disappearing and recurring a few times, finally remained. Up to the present time no other change had occurred. There was also pain in the shoulder and elbow of the paralyzed arm that dated back to the hemiplegic attack. The sharp pains that occurred in the shoulder and elbow joints of the paralyzed arm, I regard as being due to the arthritis that often accompanies a hemiplegic extremity and are therefore of different origin from some of the other painful conditions of the extremities that accompanied this case.

Examination.—The patient was poorly nourished, was dyspneic, and the lips, nose and ears showed cyanosis. He held his left arm slightly flexed at the elbow, guarding it carefully, as if to ward off possible harm. Handling the arm in any but a gentle manner made the patient wince with pain, localized principally in the shoulder joint.

His face showed the presence of old smallpox depressions. The gums and teeth were in poor condition, and the tonsils were ragged. In the neck the carotid pulsations were marked.

The lungs were negative except for a few moist râles, generally distributed over both lungs.

The apex beat of the heart was heaving, of the so-called choc-en-dome variety, and was situated in the fifth and sixth interspaces about three-quarters inch outside the midclavicular line. At the aortic orifice a systolic murmur was very prominent and was transmitted to the vessels of the neck, and at Erb's point (third interspace to the left of the sternum) a soft diastolic murmur was also heard. At the apex there was a loud systolic murmur, transmitted to the axilla and the back and preceded by a presystolic rumble.

At a later date, and after digitalis therapy had been employed, the diastolic murmur at the aortic orifice disappeared, proving the latter to be relative and due to the widening of the aortic ring, because of the loss of myocardial tone. The presystolic murmur at the apex also disappeared.

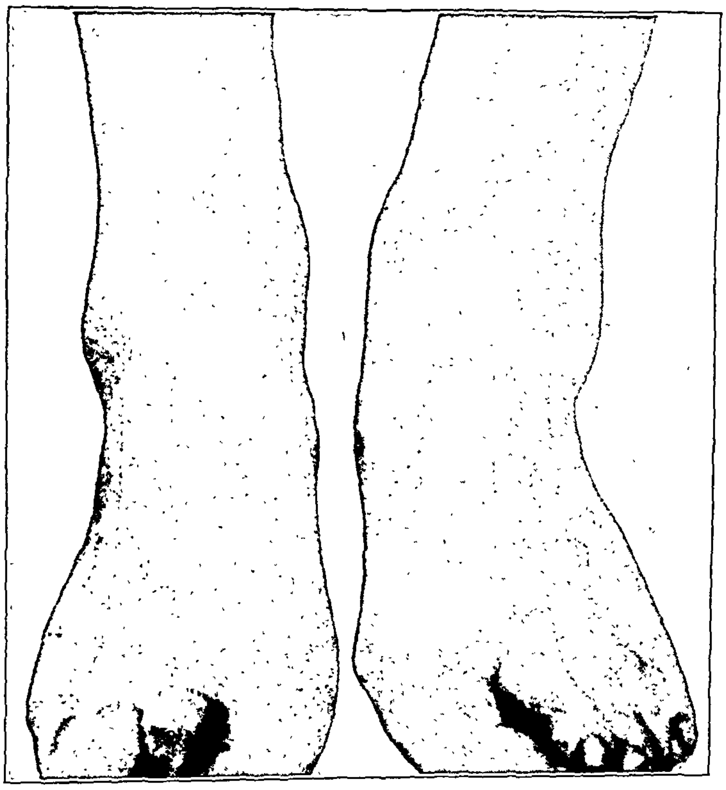

Fig. 2.—Periarticular swelling around left ankle.

The blood pressure on the right side was: systolic, 123; diastolic, 46; on the left side: systolic, 135; diastolic, 43.

The left border of the heart was in the axillary line; the right border was about one-half inch to the right of the sternum. The base of the heart was widened, as outlined by percussion. Roentgenoscopy revealed the left border of the heart to be 12 cm. to the left of the midline (the upper limit for normal is 9 cm.); the right border was 5 cm. from the midline (the upper limit for normal is 4.4 cm.). The aorta was widened. Fluoroscopy in all directions, including first and second diagonal positions, ruled out the possibility of an aneurysm.

The abdomen was found to be negative, as were also the tendon reflexes.

The extremities were interesting in the following respects: The left arm was paretic. There was, however, a slight contraction of the biceps, so that the elbow joint was held in a position of flexion. The left hand was markedly edematous, and the fingers were definitely clubbed (Fig. 1). On the left foot there was some periarticular swelling about the ankle, and cutaneous sensibility tests showed the left arm and hand to be hyperalgesic as well as hyperesthetic. The deltoid and the biceps muscles of the left arm were atrophied because of disuse, resulting from the paralysis and also the painful condition of the shoulder joint.

The muscular reactions of the biceps and the anterior and posterior bellies of the deltoid were as follows: On the left side the faradic response was greater than on the right side: the galvanic anodal contraction, however, was greater than the cathodal on the left side.

The galvanic reactions on the diseased side corresponded, therefore, to those occurring in peripheral nerve disease; but since the faradic response did not indicate such a condition, we may say that the nerve or muscle degeneration present was quite limited in its extent.

The radial pulses were unequal, the one on the right side being much smaller than the one on the left. Arterial tracings confirmed this inequality of pulse beats. They showed, further, that the right radial pulse was of the tardus variety with its gradual rise and fall. Were this the form of the pulse tracings in all the arteries, one would be justified, on that ground alone, almost positively to diagnose a condition of stenosis of the aorta or its orifice. But as this pulsus tardus was confined to the right radial artery, one is justified in diagnosing a stenosis or obstruction to the right radial artery.

The left radial artery gave an anacrotic pulse tracing in which the anacrotic limb, instead of falling, was sustained almost to the time of the dicrotic notch. This was due to the condition of high peripheral resistance, which prevented the rapid emptying of the given segment of the vessel, thus causing the pressure to be sustained, rather than to fall shortly after the rise.

The left brachial artery gave a "bisferiens pulse," with the characteristic notching on the plateau, a condition simply indicating increased peripheral resistance, such as might occur in a sclerotic condition of the blood vessels.

The right brachial tracing showed a smaller pulse than on the opposite side with a more gradual fall of the catacrotic limb.

Roentgenograms of both hands showed a rarefaction of the phalangeal bones near the interphalangeal joints, and also of the carpal and metacarpal bones.

The urinary findings were irrelevant; the blood culture was negative. The Wassermann test was negative and remained so, even after provocative mercurial administration.

COMMENT

A man with chronic valvular disease at the mitral and aortic orifices probably rheumatic in origin, or perhaps gaining entrance through diseased tonsils, was in fairly good condition until last year, when he had an acute attack of what he called the grip and which consisted of severe dyspnea and cyanosis, accompanied by cough, fever and expectoration of blood. This in all probability was a pulmonary infarct, produced by an embolus consisting of a vegetation from a diseased heart valve, or by the breaking off of a thrombus, which perhaps lodged in one of the chambers of the heart.

He then had a sudden pain in the right elbow accompanied by a subjectively perceptible smallness of the pulse on that side, which the radial tracing proved to be a stenosis of the radial artery due to an embolus.

The pains in the right foot and left knee, being unaccompanied by swelling of the joints proper, may be interpreted as embolic, and were probably caused by dorsalis pedis and popliteal artery obstruction, respectively.

The next condition brought to our attention is a hemiplegia affecting the left arm and left leg and the right side of the face. This constitutes the so-called Millard-Gubler syndrome of crossed facial hemiplegia. Since it occurred suddenly and without unconsciousness, we may safely diagnose an embolus as the cause of the syndrome. The seat of disease in this condition is the pons, on the right side, that is, corresponding to the facial paralysis. The artery affected was probably one of the right branches of the basilar artery. We have still to explain the edema of the left hand, the clubbed fingers on that side and the rarefaction of the bones of the left hand producing a picture of osteoporosis. I think that these may be grouped under the heading of trophic disturbances, due to a hemiplegia, and those due to pontile lesions, according to Purves Stuart,[1] are not infrequently accompanied by severe vasomotor disturbances. Parenthetically, I would say that the trophic changes in bone may be even severe enough to cause spontaneous fractures in cases of hemiplegia.

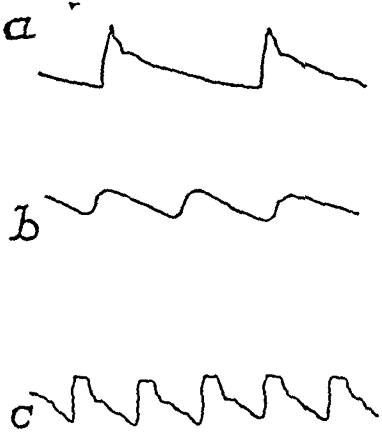

Fig. 3.—Pulse tracings: *a*, normal; *b*, right radial, pulsus tardus; *c*, left radial, anacrotic pulse.

Although the blood culture was negative, we regard this case as one of bacterial endocarditis in the bacteria-free stage. The organism is most likely of the *Streptococcus viridans* type. This brings our case in the class described by Schottmüller[2] as "endocarditis lenta" and by Libman[3] as "subacute infective endocarditis."

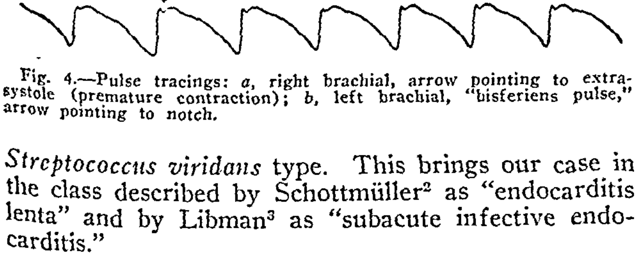

Fig. 4.—Pulse tracings: *a*, right brachial, arrow pointing to extrasystole (premature contraction); *b*, left brachial, "bisferiens pulse," arrow pointing to notch.

660 Willoughby Avenue.

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1. Stuart, Purves: Diagnosis of Nervous Diseases, 1916.
2. Schottmüller: München. med. Wchnschr. **57**: 880, 1910.
3. Libman: Am. J. M. Sc. **140**: 516, 1910.

Keeping Fit.—You can't go far if you don't keep fit.—*Bulletin*, Kansas State Board of Health.

HOOKWORM INFECTION AMONG TROOPS

TREATMENT WITH OIL OF CHENOPODIUM *

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Darling, Barber and Hacker[1] recently gave the results of their extensive study of the treatment of hookworm infection carried on in the Far East. The present investigation was largely patterned after their methods, but with two main objects in view: first, to get some idea of the severity of hookworm infection among Southern troops, and second, to check up the efficiency of the treatment used in this hospital. With the exception of thirteen negroes in Table 1, who came from their organizations, all the subjects used were chosen at random from the convalescents in the wards without reference to the degree of infection, although all were known to have positive stools. They were practically all from the Carolinas and Florida. A few had received treatment at their homes, but it does not seem to have been very effective, as one patient with 1,263 worms had received one treatment two months previously, one with 559 worms had received five, and one with 313 worms had received six.

The work was first undertaken in the hospital wards, but there was so much chance for error and the data were so incomplete that these results have largely been discarded, and none of them included in Tables 1, 2 and 3. A special building was then set aside for the work in which the patients lived and where all work was carried out. The object and methods of the investigation were explained to the patients, and they assisted greatly in the work. They were cautioned to avoid all fruits and fibrous vegetables while under treatment. Each patient had his own commode under his bed, with his name on it, and the stools were examined for forty-eight hours. The method of washing stools and removing worms was essentially that described by Darling, Barber and Hacker. The contents of a container were rinsed into a copper sieve (50 mesh) and then washed by a jet of water from a rubber tube attached to the tap. The residue containing the worms was rinsed into flat glass dishes and examined against suitable black and white backgrounds. Some of the patients became quite expert in picking out the worms, and there was a friendly rivalry as to who should have the most.

METHODS OF TREATMENT

According to the routine treatment used at this hospital, a light supper is ordered the night before and a full dose of magnesium sulphate is given about 8 p. m. No breakfast is taken in the morning, and 1.8 c.c. of oil of chenopodium is given in six gelatin capsules (supplied by a pharmaceutical house), two every hour for three doses. Two hours after the last capsules, another full dose of magnesium sulphate is given. This method was followed in the first series and the results are tabulated in Table 1. Table 2 shows a similar group of cases which were treated in the same way with the same oil expressed from the proprietary capsules. The oil was collected in a graduate and measured in a pipet, and exactly 0.3 c.c. put into hard gelatin capsules, which are very soluble in water. In every case, whatever the laboratory findings may have been, each patient received at the end of four days a second treatment with freshly expressed oil, and this was repeated at similar intervals until it was evident that all worms had been removed.

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* From the laboratory of the base hospital, Camp Jackson, Marshall A. Barber, Major, S. C., U. S. Army, chief of laboratory.

[1] Darling, S. T.; Barber, M. A., and Hacker, H. P.: The Treatment of Hookworm Infection, J. A. M. A. **70**: 499 (Feb. 23) 1918.

EFFICIENCY OF SOFT CAPSULES

In determining the efficiency of any method of treatment, the number of cures alone does not give a fair estimate, since the drug used may leave 2 or 3 per cent. of the worms and still be highly efficient, but the case does not count as a cure. By figuring the total percentage of worms removed from a group of patients, we obtained a much better index, but this has one objection—that one or two large carriers may dominate the result, while the man with a very few worms hardly influences it at all. If the percentages destroyed by one treatment in each individual of a group of patients are averaged, we again get a fairly good index; but here the man with one worm counts the same as the one with a thousand. Therefore it was decided to use both of the latter methods and average the results, obtaining a value which is spoken of as the efficiency index. The balance is similar to that of our Congress, on one side the representation based on population, and on the other, each state counting equally.

TABLE 1.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 c.c. in Soft Gelatin Proprietary Capsules

Case Number	Color	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	C	..	177	175	98.9
2	C	..	27	7	25.9
3	C	..	18	18	100.0
4	C	..	3	3	100.0
5	C	..	27	16	59.3
6	C	..	6	6	100.0
7	C	..	17	17	100.0
8	C	..	1	1	100.0
9	C	..	11	11	100.0
10	C	..	59	59	100.0
11	C	..	81	81	100.0
12	C	..	11	11	100.0
13	C	..	13	13	100.0
14	W	80	369	346	93.8
15	W	85	66	43	65.1
16	W	85	21	21	100.0
17	W	80	18	9	50.0
18	W	80	28	18	64.3
19	W	90	57	54	94.7
20	W	78	15	11	73.3
21	W	90	99	12	12.1
22	W	85	131	131	100.0
23	W	85	16	16	100.0
24	W	85	8	7	87.5
25	W	..	12	4	33.3
26	W	90	245	239	97.5
27	W	80	6	0	0.0
28	W	..	288	119	41.3
29	W	85	115	102	88.7
30	W	90	38	38	100.0
31	W	85	10	8	80.0
32	W	95	71	56	78.9
33	W	80	32	27	84.4
34	W	75	313	247	78.6
35	W	60	1,704	495	29.0
Total			4,113	2,421	2,736.6
Average					78.18

Average of percentages	78.18
Percentage of grand total of worms removed by one treatment	58.86
Average or efficiency index	68.5

Table 1 gives the results obtained from the group treated in the routine manner with soft gelatin capsules. In this table it is seen that the first thirteen patients are negroes, and the results obtained were quite satisfactory. It is difficult to say whether this is due to their superior power of digestion or to the fact that the capsules used were a new lot and very fresh; at any rate, the later results among the white patients were far less satisfactory.

TABLE 2.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 c.c. in Hard (Soluble) Capsules

Case Number	Color	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	W	75	139	115	82.7
2	W	85	164	163	99.4
3	W	85	212	198	93.4
4	W	80	121	121	100.0
5	W	75	137	137	100.0
6	W	70	14	14	100.0
7	W	65	1,263	1,160	91.8
8	W	80	81	81	100.0
9	W	85	1	1	100.0
10	W	75	55	55	100.0
11	W	90	9	9	100.0
12	W	75	41	35	85.4
13	W	85	16	3	18.7
14	W	75	8	8	100.0
15	W	75	26	23	88.5
16	W	80	10	7	70.0
17	W	85	53	53	100.0
18	W	80	107	106	99.1
19	W	75	127	122	96.1
20	W	85	57	57	100.0
21	W	80	191	190	99.5
22	W	75	4	4	100.0
23	W	85	170	170	100.0
24	W	..	1	1	100.0
25	W	75	29	28	96.6
26	W	85	559	551	98.6
27	W	80	225	222	98.7
28	W	80	35	34	97.1
29	W	85	17	17	100.0
30	W	85	55	52	94.5
31	W	75	22	16	72.7
32	W	85	261	259	99.2
33	W	80	391	389	99.5
Total			4,601	4,402	3,082.1
Average					93.40

Average of percentages	93.40
Percentage of grand total of worms removed by one treatment	95.67
Average or efficiency index	94.5

It will be seen that the efficiency of the soft capsules is fixed at 68.5 and that of the fresh oil at 94.5. The question now arises as to what this marked difference is due—whether to a lack of dosage in the soft capsule or to its lack of solubility. The chemistry department of the laboratory undertook to ascertain the contents by this method: Twenty-five capsules were placed in a graduate in water and the volume read off. They were then removed, dried quickly by blotting, and cut open. The empty shells were then put in water and the volume again taken. The difference represents the amount of oil in twenty-five capsules. By this method the contents were found to be about 73 per cent. of that stated, but there may be errors in this calculation, as, for instance, absorption of the oil into the gelatin.

Darling, Barber and Hacker, in their report, give a number of figures bearing on this point. Using as efficiency index the group percentage of worms removed by one treatment, they found that the result of divided doses of oil of chenopodium was: 2 c.c., 95.18 per cent.; 1.5 c.c., 88.7 per cent.; 0.75 c.c., 80 per cent., and 30 minim soft gelatin capsules, 66.4 per cent. This shows distinctly that the insolubility is the main factor, as even 0.75 c.c. of the fresh oil was superior to the soft gelatin supposed to contain 2 c.c. It is interesting to note the similarity of these figures to those shown in the foregoing tables, with particular reference to the low efficiency of the soft gelatin capsules. Those used by Darling, Barber and Hacker were old. Those used here were obtained fresh, but from another manufacturer.

INSOLUBILITY OF CAPSULES AS CAUSE OF POOR RESULTS

Based on the idea that the insolubility was the main factor, a small group of patients was treated with three soft and three hard capsules. If the cause of the poor results of the routine treatment was the lack of dosage, the index would presumably be midway between that of Table 1 and Table 2. On the other hand, if the insolubility was the main factor, it was thought that perhaps the best results of all might be obtained. That is, the very soluble capsules would dissolve in the stomach and the oil be effectual on those worms high up in the intestinal tract, while the tougher, soft capsules would break up later on, and not losing any effectiveness by absorption, would care for the worms lower down. Table 3 shows this group of cases.

TABLE 3.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 c.c.: 0.9 c.c. in Soft Capsules, 0.9 c.c. in Hard (Soluble) Capsules

Case Number	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	..	52	50	96.2
2	65	919	892	97.1
3	75	130	130	100.0
4	80	81	76	93.8
5	75	40	40	100.0
6	85	10	9	90.0
7	75	364	361	99.2
8	80	47	45	100 0
9	85	26	25	96.2
10	80	169	153	90.5
Total..........		1,836	1,781	963.0
Average..........				96.3

Average of percentages..........	96.3
Percentage of grand total of worms removed by one treatment...	97.0
Average or efficiency index..........	96.7

These results indicate that the factor is not insufficient dosage, and apparently is the lack of solubility. It should be stated, however, that this series of cases was an afterthought, and in the second treatments in some of the cases the stools could be examined for only twenty-four hours. In previous cases, however, experience has shown that the early stools are the important ones, those of the second day showing little or nothing. The efficiency index of this group is determined at 96.7, slightly better even than the hard capsules alone (94.5), and very markedly superior to the soft capsules at 68.5.

OTHER OBSERVATIONS

In most of these cases the hemoglobin was taken by a Tallqvist scale in order to ascertain whether it gave any indication of the amount of harm the infection was doing to the patients. Table 4 shows the result in eight groups of patients classified according to the number of worms. It is not practical to figure very closely on a factor which is as uncertain as the hemoglobin estimation, but as it stands, it appears there is no particular reduction in anything under 500 worms. In all other degrees of infection, most patients were found in the 80-89 group.

TABLE 4.—CORRELATION BETWEEN HEMOGLOBIN AND NUMBER OF WORMS

Number of Worms	Hemoglobin			
	60 to 69	70 to 79	80 to 89	90 to 100
1 to 25	0	4	9	2
26 to 50	0	4	4	0
51 to 100	0	1	5	3
101 to 200	0	4	8	0
201 to 350	0	1	5	1
351 to 500	0	1	2	0
501 to 1,000	1	0	1	0
Over 1,000	2	1	0	0

Table 5 shows the incidence of worms in the two races. Although the number of negroes is rather small, it seems evident that they are less heavily infected than *white persons.*

TABLE 5.—INCIDENCE OF WORMS BY GROUPS

Number of Worms	Number of White Cases	Number of Colored Cases
1 to 25..........	19	11
26 to 50..........	10	4
51 to 100..........	11	1
101 to 200..........	14	2
201 to 350..........	7	0
351 to 500..........	3	0
501 to 1,000..........	2	0
Over 1,000..........	3	0
Total..........	69	18

The average number of worms in sixty-nine white patients not previously treated in this hospital was 155.3. In eighteen negroes the average was 38.3. Three white patients had 1,010, 1,263 and 1,704 worms, respectively. The last patient was a thin, pale boy very evidently weakened by his disease, and before he was discharged his appearance and weight had improved remarkably.

In all cases except a few of the heaviest infection, the number of worms of each sex was determined to see which was the more resistant to the oil. Table 6 shows that there is no difference at all and that the larger female has no more resistance than the smaller male.

During this work, the patients were under close observation following the treatment, and it was possible to observe any symptoms of poisoning if they were present. In taking the fresh oil, the patients usually felt like lying down after the second or third dose, and, as a rule, they remained quiet during the day; but they were always ready to eat when they were allowed to, and felt better afterward. There was no vomiting except occasionally after the purge, and there were no other toxic symptoms except a feeling of weakness, of which all complained. This passed off in a few hours, and in the morning they were about as usual. The patients of the first series agreed that the hard capsules made them sicker than the soft, but there were no objective signs of toxic action of the drug.

TABLE 6.—INCIDENCE OF WORMS BY SEX

	Number	Per Cent.
Removed by first treatment:		
Females..........	3,702	56.5
Males..........	2,854	43.5
Total..........	6,556	
Removed by later treatments: i. e., survivors of first treatment:		
Females..........	380	56.0
Males..........	299	44.0
Total..........	679	

CONCLUSION

The results show that while in a considerable proportion of soldiers the infection is light, all grades are encountered and a few may be termed as severe. The negro appears to be less *severely infected than the* white race. The soft gelatin capsules stated to contain 5 minims are distinctly less efficient than a similar dose placed in soluble capsules.

VACCINATION OF TUBERCULOUS PATIENTS AGAINST SMALLPOX

RESULTS IN TWO HUNDRED CASES

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A review of the small amount of literature on the subject of vaccination against smallpox of tuberculous patients and personal consultation with several men of authority reveal the fact that it is apparently a natter of common agreement that vaccination should t be done unless it is extremely necessary for the afety and welfare of the patient.

The results obtained in compulsory vaccination of about 200 patients with pulmonary tuberculosis seem strongly to contradict this idea.

The reason for the compulsory vaccination was that a virulent case of smallpox broke out in the institution and the patient had been mingling with all the other patients for about ten days prior to the time of the eruption and the making of the diagnosis.

REPORT OF CASE

W. Mc., man, aged 34, white, admitted, Aug. 2, 1918, with the ordinary history of a tuberculous breakdown, was well nourished and was only 5 pounds underweight, weighing 170 pounds. He had no cough and very little expectoration, but what there was gave a positive reaction for tubercle bacilli. Chest examination revealed very little. The patient was classed as incipient (Turban Stage I).

August 12—ten days after admission—the patient's temperature rose to 102.6. He complained of headache, general malaise, nausea, vomiting and constipation. Chest examination disclosed no cause for the rise of temperature. On the 16th his temperature dropped to subnormal and he developed an eruption. A diagnosis of smallpox was made, which was confirmed by the state dermatologist.

VACCINATION OF THE OTHER PATIENTS

As the patient had been mingling with the other patients and employees in the main dining hall and cottages, compulsory vaccination was decided on, and all patients, regardless of stage or activity, were vaccinated, August 17. The number vaccinated was 200, made up of seventy in the first stage, eighty-three in the second, and forty-seven in the third. The majority had some activity and some elevation of temperature. Among these patients there were forty who either had never been vaccinated before, or had been vaccinated with negative results.

Three weeks after vaccination all cases were closely observed, and it was found that there were about 50 per cent. positive vaccinations. Fifteen per cent. of the patients had sore arms and 8 per cent. were "on tray" for one or more meals. On the ninth day after vaccination, one patient developed a typical varioloid eruption about the neck and also had a positive vaccination on the arm. Several patients who had to be kept on tray had a rise in temperature which lasted for a day or two and was present at the time the redness, swelling and soreness of the arm were the greatest. There were no instances in which patients complained of any conditions pertaining to the chest that could in any way be traced to the vaccination. The majority of the patients were examined three or four weeks after the vaccination, and in no case were there any changes incompatible with the usual course of tuberculosis.

In reviewing the results obtained from this series of vaccinations, it would appear that when a case of smallpox breaks out among tuberculous patients and there is a possibility of a spread of the disease among the patients, compulsory vaccination is advisable.

The results obtained in far advanced cases could not be differentiated from the results obtained in the first and second stage cases, and it would seem, therefore, that these cases should not be exempted when considering vaccination. Although it would not be advisable to vaccinate all patients against smallpox when first admitted to an institution, yet it should be done at once when the necessity arises.

The smallpox patient made a normal recovery from his smallpox and was discharged from the institution within three months as an apparently arrested case of pulmonary tuberculosis. His sputum was negative for tubercle bacilli on discharge. No other cases of smallpox developed at the institution.

STREPTOCOCCUS PNEUMONIA

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At Fort Sam Houston, Texas, during the winter of 1917-1918, it was noted that the majority of pneumonia cases presented a clinical type not often seen in civil practice. The patients were highly septic; the pneumonia, for the most part, followed measles, and when not fatal, it often terminated in empyema. It was further observed that the usual type of lobar pneumonia was often complicated by relapses, which were attributed to delayed resolution. The frequency of what we shall call, for the present, septic pneumonia, and its occurrence as a complication of measles, led to an investigation as to the causative organism in this type of the disease, as well as in the complicated, so-called lobar pneumonia. It is well known that the hemolytic streptococcus is almost exclusively the causative organism of complications in scarlet fever cases; and since pneumonia is not an uncommon complication of this disease, we were led to map out a bacteriologic investigation of measles and pneumonia cases; this included the identification of this organism.

As previously reported, it was readily determined that a large percentage of measles patients harbored the hemolytic streptococcus in their throats on entering the hospital, and further, that this organism was found in practically all specimens of sputum from septic pneumonia patients, also in the pus from empema patients, and finally in the blood stream shortly before death.[1] Furthermore, this organism was found in the throat, sputum, empyema pus, and blood stream of many patients suffering from so-called lobar pneumonia.

It would seem that this organism is of sufficient importance to warrant a brief consideration of its epidemiology. Epidemiologic studies of the occurrence of more or less extensive milk-borne epidemics of tonsillitis or septic sore throat in England, as well as in this country, chiefly in the vicinity of Boston, Chicago and Baltimore, make plain the epidemiology of hemolytic streptococcus infection. It is the opinion of Smith and Brown that the organism is of human origin, that it gains access to the cow's udder from infected milkers, and that milk is the chief, if not the only, disseminator of this disease on a large scale, in these milk-borne epidemics. Smillie reports its frequent occurrence in the throats of scarlet fever patients and in the blood stream in the fatal cases. It has been isolated from the blood stream of septicemia patients following trivial wounds, and is now believed to have been the chief cause of sepsis following childbirth.

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[1] Cumming, J. G.; Spruit, C. B., and Lynch, Charles: The Pneumonias: Streptococcus and Pneumococcus Groups, J. A. M. A. 70: 1065 (April 13) 1918.

In pursuance of our plan of investigation of throat swab cultures from measles patients, it was at first believed that we should determine the prevalence of type pneumococci as well as hemolytic streptococci. But owing to the early discovery that the hemolytic streptococcus was the predominant, if not the sole, cause of pneumonia following measles, we later limited our investigation to the identification of hemolytic streptococci.

HEMOLYTIC STREPTOCOCCUS CARRIERS

With the view of determining the percentage of hemolytic streptococcus carriers among measles patients on entrance to the hospital, throat swab cultures were taken in 452 cases. These fell into two groups, one showing Types I and II,[2] and the second showing Type III.[3] Of these, 294, or 64 per cent., showed Types I and II hemolysis, while 158, or 35 per cent., showed Type III hemolysis. Among the 294 patients showing Types I and II hemolytic organisms, thirty, or 10 per cent., developed these complications: otitis media, four; bronchopneumonia, five; tonsillitis, seven; scarlet fever, three; lobar pneumonia, two; acute bronchitis, seven; erysipelas, one; cellulitis, one.

In contrast to the foregoing group, which shows 10 per cent. of complications, we find that among 158 patients showing Type III hemolytic streptococci, sixty-five, or 41 per cent, developed complications. These were: bronchopneumonia, fifty-two; empyema, nineteen; tonsillitis, nine; otitis media, eight; arthritis, four; acute bronchitis, five; mumps, one; lobar pneumonia, one; cellulitis, six. These eighty-four complications occurred among the sixty-five patients harboring streptococci.

If only the pneumonia cases are considered in these two groups of findings, it will be noted that among those measles patients from whom organisms showing Types I and II hemolysis were isolated, only 2 per cent. developed pneumonia; while among those harboring Type III hemolytic streptococcus, 32 per cent. developed pneumonia. The incidence in percentages was sixteen times greater among streptococcus carriers.

Considering the total pneumonia cases in both groups of throat findings among measles patients, it is shown that of the 452 cases, 12 per cent. developed pneumonia, and over 94 per cent. of this 12 per cent. occurred among streptococcus carriers.

In this series of cases it has been established that 35 per cent. of the measles patients were hemolytic streptococcus carriers on entering the hospital, and that 33 per cent. of these developed streptococcus pneumonia; while among the 65 per cent. of patients who were noncarriers, only 6 per cent. developed this complication.

In contrast to the high percentage of hemolytic streptococcus carriers among measles patients, it is pointed out that among 168 swabs from average throats, there was found only 6 per cent. streptococcus carriers. This percentage corresponds to that obtained by Smillie in his investigation of hemolytic streptococci in Boston. It is a significant fact that there are six times more streptococcus carriers among measles patients than among average well persons.

It might seem that the streptococcus in the throat of a carrier prepares the way for measles virus infections, and that the latter infection, in turn, produces a condition—lowered resistance—that favors streptococcus pneumonia—an extension of this infection to the lung, the pleural and pericardial cavities, and the blood streams, joints, etc.; or it is possible that both infections occur simultaneously through the same avenue of transmission. In order to determine whether or not measles patients are streptococcus carriers prior to measles infection, it is suggested that at least 1,000 recruits at some camp be examined for this organism, dividing these into carriers and noncarriers, and that they be kept under observation for the occurrence of measles in the two groups. Are streptococcus carriers more susceptible to virus infections?

BACTERIOLOGIC FINDINGS IN ANTEMORTEM PLEURAL EXUDATES AND BLOOD OF PATIENTS WITH PNEUMONIA FOLLOWING MEASLES

Of ninety-two examinations of pleural exudates from patients in the pneumonia wards, organisms were found in seventy-four specimens. Of forty-six specimens from patients diagnosed as having lobar pneumonia, 61 per cent. proved to be pure hemolytic streptococcus, and 39 per cent pneumococcus. Of twenty-eight bronchopneumonia specimens, 86 per cent. were streptococci and 14 per cent. pneumococci. By consolidating these two groups we find that 72 per cent. were hemolytic streptococci and 28 per cent. pneumococci. From these figures it would appear that clinically there is either a considerable error in the differential diagnosis of the pneumonias, or that a large percentage of the lobar types are complicated by streptococcus infection.

From patients with pneumonia following measles, thirty-eight blood specimens were examined. Of these, twenty-nine were negative, while nine, or 24 per cent., were positive for hemolytic streptococci. With few exceptions these positive specimens were obtained within twenty-four hours before death, showing that the blood stream invasion with this causative organism was a late event. In the series of necropsies to be reported, 52 per cent. of heart's blood cultures were positive.

BACTERIOLOGIC FINDINGS AT NECROPSY

In thirty-four necropsies on nine lobar pneumonia and twenty-five bronchopneumonia patients, streptococci—Type III hemolysis—were isolated from twenty-one lung specimens, twenty-three pleural exudates, fourteen pericardial exudates, and sixteen heart's blood specimens.

In twenty-seven, or 80 per cent., of the specimens from serous exudates or heart's blood, the streptococcus was isolated from pure culture, and in four, or 12 per cent., of the specimens it was coexistent with the pneumococcus; furthermore, it was found in one or more of these specimens in thirty, or 88 per cent., of the necropsies, lobar pneumonia cases included.

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[2] Small area hemolysis representing pneumococcus and Streptococcus viridans.

[3] Large area hemolysis representing Streptococcus hemolyticus colonies.

The streptococcus was isolated from each of the twenty-five necropsies on bronchopneumonia patients. Of these, 75 per cent. were known to have followed measles.

Of the nine lobar pneumonia postmortem specimens rom clinically diagnosed lobar pneumonia cases, in nly four instances was the pneumococcus unaccompanied by the streptococcus. In two others only streptococci were found, and in the remaining three there were both pneumococci and streptococci.

In only one necropsy on a patient that had had pneumonia following measles was a type epidemic pneumococcus found, and this was coexistent with the hemolytic streptococcus; while in the nine lobar pneumonia cases, hemolytic streptococci were found, either in pure culture or coexistent with pneumococci, in five, or 55 per cent., of the necropsies.

It would appear that the hemolytic streptococcus was the immediate cause of death in thirty, or 88 per cent., of the thirty-four cases, lobar pneumonia cases included; and since this organism was found in fairly pure cultures in all lung specimens as well as in pure cultures, in either serous exudates or the heart's blood or both, in cases of pneumonia following measles, it may be concluded that the hemolytic streptococcus is the causative organism in this complication following measles, and moreover, that it was the immediate cause of death in a large percentage of so-called lobar pneumonia cases.

SWAB AND SPUTUM SPECIMENS

Since, in this series of necropsies, the hemolytic streptococcus was identified as the causative organism of bronchopneumonia following measles, a series of sputum specimens was examined in conjunction with throat swabs. Of the swabs, 76 per cent. were positive, as were also 87 per cent. of the sputum specimens. In 55 per cent. of the cases the swabs as well as the sputum specimens were positive; while either swab or sputum was positive in 100 per cent. of the cases. These findings show the importance of taking both swab and sputum specimens.

HEMOLYTIC STREPTOCOCCI IN REMOVED TONSILS

Of 142 removed tonsils, 82 per cent. showed hemolytic streptococci. The tonsil acts as a reservoir for the organism. On removal of the tonsil, the throat rapidly clears of this, the most common of all secondary invading organisms.

IDENTIFICATION AND CLASSIFICATION

On account of the unquestioned prevalence of streptococcus pneumonia, both as a complication of measles and as a coexistent or a terminal infection in lobar pneumonia, it was decided to examine for streptococci sputum specimens submitted to the pneumococcus division for type identification. A total of ninety-two specimens was examined, and forty-nine, or 53 per cent., of these showed Type III hemolytic streptococci. Of these ninety-two sputum specimens, pneumococci Types I, II or III were identified in only 9 per cent. of the cases. Owing to the prevalence of streptococcus infection as a secondary and fatal involvement in lobar pneumonia, as well as in the virus infections, there is need for the instruction of all laboratory workers in the use of the hemolytic plate in the diagnosis of pneumonia. The clinician should insist on a report of the presence or absence of streptococci, as well as of type pneumococci. The importance of these findings in the sputum is substantiated in nine so-called lobar pneumonia cases, in which, at necropsy, hemolytic streptococci were isolated from the heart's blood or serous cavities in 55 per cent. of the specimens.

We are led to believe from our investigations that a diagnosis of Type IV pneumococcus should be made guardedly; furthermore, since massive lobular pneumonia may be incorrectly diagnosed as lobar pneumonia, and as lobar pneumonia involvements may be associated with streptococcus infection, which at Fort Sam Houston gave a mortality of 82 per cent. during January and February, we believe that all specimens of sputum should be examined for hemolytic streptococci as well as for pneumococci. Since the pneumonias are of two main groups—pneumococcus and streptococcus—and as these may be coexistent, the isolation of the causative organism or organisms in pure culture is essential to group as well as to type identification.

The value of routine streptococcus identification will become of particular importance in the event of the successful production of antistreptococcus serum.

PREVALENCE OF HEMOLYTIC STREPTOCOCCI

	Positive for Hemolytic Streptococci, No.	Per Cent.
Swabs from measles cases	857	35
Swabs from lobar pneumonia	165	69
Sputum specimens from lobar pneumonia	92	41
Swabs from scarlet fever	192	87
Swabs from otitis media	204	74
Swabs from mumps	147	37
Swabs from tonsillitis cases	79	54
Cultures from removed tonsils	142	82
Nose swabs from carriers	69	55
Average percentage of streptococcus carriers among foregoing cases	...	59
Throat swabs from average healthy individuals	168	6
Total	2,135	

The clinical classification of the pneumonias is important, though less so than the classification from the bacteriologic point of view. From the findings here presented it would seem that the disease may be classified according to the causative organisms into two main groups, secondary streptococcus or pneumococcus pneumonia following virus infections and primary pneumococcus which may be followed by secondary streptococcus pneumonia.

We confirm the contention of Smith and Brown that the hemolytic streptococcus Type III hemolysis is a definite type, in that the colonies produced by us in 10 per cent. horse blood agar were uniform in character, and that 150 strains secured from necropsies, throat swabs, and sputum specimens gave the characteristic sugar reactions. Since the hemolytic streptococcus has proved to be such a common cause of death, in the accompanying tabulation we present in brief the percentages of prevalence of this organism in the 1,967 specimen examinations.

It is interesting to note that nose swabs were taken from sixty-nine known carriers, and that 55 per cent. of these proved positive for streptococci. This finding, in conjunction with our experiments showing that streptococci in droplets are forced into the air during the act of coughing, might lead one to believe that droplets as well as indirect contact infection would be a serious problem in measles and scarlet fever wards. To gain some information on this point, the dust from seven wards was examined, with negative results. Although ward dust may be quite free from streptococci, yet our observations in the surgical wards would indicate that bed linen and garments soiled with streptococci may act as a transmitting agent in the case of wound infection. Among clean operative cases the wounds in twelve became infected with hemolytic streptococci. Throat swab examiners showed that all these patients were streptococcus carriers. Auto-infection, either through soiled linen as a medium or through the blood stream, would in these cases appear to be the only two avenues of infection; and of the two, the former would seem to be the more possible.

From the results of throat swab examinations of twenty-eight attendants in the streptococcus wards, it was found that 25 per cent. of these were hemolytic streptococcus carriers. If this finding alone is considered, one would conclude that streptococcus pneumonia may be called a hospital infection. But this is not so, because it was shown that 94 per cent. of all streptococcus pneumonia patients were streptococcus carriers on entrance to the hospital. In addition, it was found by the examination of convalescent measles patients that streptococcus infection rarely occurred in the hospital wards. Infection of ward attendants is naturally the result of prolonged exposure and close association, and from the results of our investigation it would seem that cross-infection among patients seldom occurs. In order to prevent the possibility of cross-infection in the wards, which we do not believe takes place to any great extent, patients harboring hemolytic streptococci should be isolated as soon as possible after admission.

In the large cantonment hospitals where a large number of patients are cared for, it is preferable to have three or more wards—one of these used exclusively for a detention ward, where regulations providing for the sheet method of separation, the individual face mask, and the frequent washing of hands of attendants are rigidly enforced; other wards may be designated as streptococcus and clean wards.

In the streptococcus wards, the usual methods of disinfection and the practice of scrupulous cleanliness of hands should be insisted on in order to protect attendants against infection. In our opinion, the sheet and individual mask method of protection is of value only in the detention ward, or when it is impossible on account of lack of laboratory facilities to classify the patients into carriers and noncarriers.

CONCLUSIONS

From the evidence here presented it will be seen that:

1. The hemolytic streptococcus was present in the throats of 35 per cent. of all measles patients on entrance to the hospital, and that 94 per cent. of measles patients who developed bronchopneumonia belonged to this group of carriers, while only 6 per cent. of noncarriers developed pneumonia complications.
2. This streptococcus was found in pure cultures at necropsy in the serous cavities and heart's blood of all measles-pneumonia patients, and in 55 per cent. of lobar pneumonia patients.
3. This streptococcus is the same as the beta streptococcus of Smith and Brown.
4. Type III hemolytic streptococci isolated from the serous cavities and heart's blood were always large zone hemolyzers.
5. The presence of hemolytic streptococcus in the throat and sputum of so-called lobar pneumonia patients and in the serous cavities and lungs at necropsy shows that in the classification and treatment of the pneumonias, the streptococcus must be as diligently sought for as the type pneumococci.
6. Laboratory men should acquire a technic for the recognition and isolation of the hemolytic streptococcus from throat swabs and sputums of measles and all pneumonia patients.
7. In practically all cases (94 per cent.), the hemolytic streptococcus is acquired *before* entrance to the hospital.

Prevention consists in: (*a*) the pasteurization of all milk supplies, thus eliminating the possibility of septic sore throat followed by the carrier state; (*b*) the removal of tonsils of those individuals who are identified as streptococcus carriers; (*c*) the control of measles epidemics by the early recognition and isolation of patients; (*d*) the segregation of streptococcus carriers in hospital wards; (*e*) scrupulous cleanliness of the hands of attendants and patients, and (*f*) the development of a reliable vaccine and serum treatment.

TWO NEW DIAGNOSTIC METHODS FOR PATIENTS WITH CARDIAC DISEASE

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1. TACHYCARDIA

In the recent articles on the subject of so-called soldiers' heart, latterly termed "neurocirculatory asthenia," it is noted that this syndrome is encountered in the civilian as well as in the soldier. This fact is borne out forcibly if one is on the alert during the entrance examinations of recruits. Since the beginning of the very large draft increments, every man entering the service has been examined for evidence of cardiovascular disease. This work, formerly done parenthetically by the tuberculosis board at Camp Funston, is now conducted by medical officers of the cardiovascular board, who have had a rare experience in examining many subjects and in the detection of suggestive signs of cardiovascular disorders. At an average, during a large draft, 1,500 men pass through their hands each day. Two medical officers, working in shifts of two hours each, are responsible for this work. From 5 to 7 per cent. of the total number (1,500) each day are referred to the cardiac room for suspected cardiovascular disease. This room is manned by two officers. Here the subjects have a searching examination, the results of which are recorded, if necessary.

The most difficult and trying task in the preliminary examinations is the proper decision in cases showing various grades of tachycardia. They represent an enormous number of cases. When one considers that at this receiving station, which represents a highly organized and beautifully regulated machine, the men are admitted, bathed, examined (physically, morally and mentally), inoculated, put into soldier's clothes and assigned, all on the day of their arrival, it is little wonder that even the most stable nervous systems show evidences of psychic disturbance. However, after the observation, in the course of many previous examinations, of certain indefinable, as well as some well defined points, a large portion of these cases are disposed of with little effort. Although it is not a bit unusual to listen to hearts in this category beating between 120 and 180, still in cases of simple or neurotachycardia the accompanying dyspnea is not present. The patients frequently breathe irregularly both as to rate and depth. They are "fidgety" and have coarse, irregular tremors often confined to one hand or the other, stopping during conversation. No pinched expression is noted. There is frequently some hesitancy in speech. The individual is simply excited. Frequently during auscultation the heart gradually reduces its rate to nearly normal, and again accelerates, especially if the patient is allowed to talk or is told to breathe deeply. In nearly all such cases, the dorsal posture causes an early or delayed diminution of the pulse rate to 100 or lower. It becomes second nature to resort quickly to one or the other method of proof of nervous influence. There are, however, a large number of cases which are not amenable to these tests. A very reliable means at our hands for testing for simple tachycardia will presently be advanced.

With the cases of persistent tachycardia (of course, excluding toxic causes), the task becomes quite difficult. This holds true for the soldier as well as for the recruit. It is amazing to note with what rapidity the heart beats, in such cases, with no apparent discomfort on the part of the individual. During inactivity there is no disturbance of respiration. No simple means, as explained before, are of avail in reducing the cardiac rate. The patients are usually not excited. Their response to exercise is poor, prolonged dyspnea, increased tachycardia, returning in from three to five minutes to the original high rate, a somewhat anxious look and inordinate sweating being prominent symptoms. Questions, not leading in character, usually elicit one or more of the following facts: (1) poor sustaining powers in games, running or lifting, dating from some infection, such as rheumatism, grip, pertussis or measles; (2) various types of sensations in the region of the precordium at irregular times, described as a burning, actual pain, or a feeling of fulness or heaviness; (3) palpitation, or a consciousness of rapid heart rate, especially in the recumbent posture; (4) spots appearing before the eyes, and giddiness but seldom actual fainting; (5) headache. It is usually related that one or more of these symptoms always appears during exertion, but may be present during rest. In a few instances, a well defined history of mental or "nervous" diseases in the family is obtainable; but statistics on this point are meager.

Let it be repeated, the same condition exactly is noted in the raw recruit as in the tried soldier. The latter is referred for investigation, because of his inability to stand effort. The former is suspected in the course of examination, owing to a persistent rate above 100. The condition belongs to the neurocirculatory asthenia category. It is interesting to note in such persons how natural forces have guided their footsteps. If they are of the farming class, their work has been facilitated by tractors or riding. In the various civic occupations, they have sifted into positions necessitating little bodily effort.

Now as to the test that has been of such great aid in our work. If the procedure has been suggested heretofore, it is very probable that its use has not been generally appreciated. Its value lies in the fact that the separation of the more stubborn cases of simple tachycardia from the persistent ones is facilitated. The individual, on direction, drops the head and bends forward to about an angle of 45 degrees, whereupon the rapid heart will retard to a remarkable degree very quickly, sometimes to half of the original rate, if the case is one of simple tachycardia. The other type is not affected at all. Also in the former instance, the rate in the bending position corresponds fairly accurately to the rate in the recumbent posture. It requires less time to resume a nearly normal rate in the former than the latter procedure and is, thus, a quicker method. The test has been applied in a very large number of cases so far with very gratifying results. A certain number of soldiers who have responded to this test have been followed up. They are doing full duty.

This adjunct, in the disposition of a rather difficult group of cases, is recommended for further use and comment by members of the service and the profession.

2. AMYL NITRITE INHALATIONS AS AN AID IN THE DIAGNOSIS OF PRESYSTOLIC MURMURS

A probable explanation of the large number of cases of mitral stenosis reported from the various camps is the fact that fatigue, excitement and the influence of new environments cause the heart tones in many instances to become altered in character. The experience at this camp, where large numbers of recruits are examined, bears evidence to this fact. This has been true to such an extent that in our reports to the Surgeon-General, certain new terms have appeared as characterizing diagnoses, such as "blurring of the first mitral tone" or "reduplication of the first sound at the apex." This has been done simply to indicate that there is possibly some disturbance during presystole, but that there were no other signs present of a definite nature. Also, there has been much discussion among the cardiovascular examiners concerning definite thrills felt at the mitral area. By close observation, however, it is the conviction of this board that the time of the thrill, other than those characterizing mitral stenosis (or a similar lesion at another area) is systolic and due to an overacting ventricle. In most instances, a recumbent position, or exercise, causes the systolic thrills to disappear. As suggested above, the same difficulty has been experienced by other observers, and various tests have been suggested as a means of establishing a certain diagnosis, or excluding it.

Our purpose here is to advance the results of our observation in the use of amyl nitrite inhalations as an aid in this difficulty. The procedure was recommended by R. A. Morison.[1] This investigator suggested, after a fair trial of this drug, that a valuable aid was at hand to eliminate the difficulty in the diagnosis of the existence, or nonexistence, of presystolic murmurs. We have followed his method in each instance.

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[1] Morison, R. A.: Amyl Nitrite Inhalations in Diagnosis of Mitral Stenosis, Brit. M. J. 1: 452 (April 20) 1918.

The division surgeon procured fifty ampules of amyl nitrite, containing 3 minims each. These were used in all doubtful cases. Of course the influence on the heart, as far as it concerns our experiment, is very similar to the effect of exercise. However, there is one great advantage: It is possible to listen to the heart during its period of increasing activity and acceleration, and there is no attending dyspnea as a disturbing factor. In other words, as the patient administers the drug to himself the observer listens at the apex of the heart until the desired effect of the drug is produced. In this way several phases of increasing cardiac activity are observed. A total of forty-eight cases has been examined, and it is the opinion of the observers that a very valuable aid in diagnosis has been obtained. In ten cases, the doubtful nature of the presystolic sound was intensified to such a degree as to admit of a positive diagnosis of mitral stenosis. In the balance of the cases, the suggestive presystolic sounds were eliminated. It might be said here that the greatest difficulty was experienced in the negro, for here the element of neurosis is clearly manifest, and this influence on the heart produces at times varied changes. Chief among these are a greatly accentuated pulmonic second and a very loud sound at the apex and a thrill at this area, the timing of which is frequently difficult. In such cases we have found recourse to these inhalations valuable.

Naturally a report of this nature partakes entirely of personal experience, as there is no definite way to publish the data. The chief object in presenting our observations is to corroborate thoroughly the findings of Morison, and to suggest the further use of this method.

TREATMENT OF INFLUENZAL PNEUMONIA BY THE USE OF CONVALESCENT HUMAN SERUM

SECOND REPORT

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In a preliminary report,[1] we presented the data of thirty-seven cases of bronchopneumonia, following the present epidemic of so-called influenza, treated with serum obtained from patients who had recovered from a similar pneumonia. Later, in an informal letter to The Journal, we[2] advised the discontinuance of the compatibility tests, and other modifications to simplify the preparation and administration of the serum.

The present report gives as complete data as were obtainable in 151 cases at the Naval Hospital, Chelsea. This represents all cases of the foregoing type admitted to our wards since the treatment was started. For convenience and completeness, this includes the original thirty-seven cases reported.

In our preliminary report, we also noted that the severity of the disease was on the wane. Naturally, we wished for an opportunity to carry on the work in a field in which the severity of the epidemic was unquestionably great. After several futile attempts to find such a place, there came to us a group of men from the U. S. S. *Yacona*. Here the incidence of the influenza, the complicating pneumonia and the severity of the infection appeared quite comparable with the situation at the beginning of the outbreak. Hence, for comparison, we have considered this group not only in the 151 total cases, but also separately. In addition to this *Yacona* group, it should be noted that eighty cases represent the latter part of the first epidemic, whereas the others represent those in the more recent recrudescence of the epidemic where the severity of the disease has undoubtedly been great, though somewhat less than during the first part of the epidemic. Furthermore, also for the sake of completeness, we are presenting the entire laboratory and clinical procedure.

TABLE 1.—DAY OF PNEUMONIA WHEN SERUM WAS FIRST GIVEN, AND NUMBER THUS RECEIVING IT

Day	No.
First	36
Second	59
Third	25
Fourth	14
Fifth	9
Sixth	1
Seventh	3
Eighth	2
Undetermined	2
Total	151

The accompanying tabulations represent in detail our findings in the cases treated.

The day of the pneumonia on which the serum was first given in the 151 cases tabulated is indicated in Table 1. It is evident that most of the patients received serum within the first four days of the pneumonia, and that the majority received it within the first forty-eight hours. In other words, although most of the patients were seriously ill, they received serum within a time most favorable for serum therapy.

The number of injections of serum each patient received is shown in Table 2. It will be seen that three injections of serum were sufficient in 132 cases, and that more than two thirds required only two doses and that about one third required only one dose. It is noteworthy that the majority of the patients requiring more than one injection had advanced at least two days in their pneumonia.

TABLE 2.—NUMBER OF INJECTIONS OF SERUM EACH PATIENT RECEIVED

No. of Injections	No. of Patients
1	56
2	49
3	27
4	9
5	6
6	3
7	1
Total	151

The average amount given at each injection was 120 c.c.

IMMEDIATE RESULTS

A chill, as described below, may follow in thirty minutes after injection of the serum. In a few hours, the patient shows decided signs of improvement. The toxic symptoms subside, as indicated by cessation of nausea and vomiting, if present, and disappearance of vasomotor disturbances and headache. The anxious expression of a sick patient is transformed into that of a patient in convalescence; these patients say that they are decidedly better, and often that they are well. The temperature, pulse and respiration begin to fall, the temperature and pulse reaching normal in advance of the respirations. The appetite returns. Signs of improvement or recovery may follow the first injection of serum, or in severe cases a gradual improvement may take place. Two or more injections may be necessary to produce these results, as indicated in the preceding tabulations.

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[1] McGuire, L. W., and Redden, W. R.: Treatment of Influenzal Pneumonia by the Use of Convalescent Human Serum, J. A. M. A. 71: 1311 (Oct. 19) 1918.

[2] McGuire, L. W., and Redden, W. R.: Discontinuance of Compatibility Test in Serum Treatment, Correspondence, J. A. M. A. 71: 1765 (Nov. 23) 1918.

TABLE 3.—PERSISTENCE OF FEVER AFTER FIRST INJECTION OF SERUM

	No.
Normal less than 24 hours	27
Normal in 24 hours	56
Normal in 2 days	38
Normal in 3 days	14
Normal in 4 days	8
Normal in 6 days	3
Normal in 9 days	1
Normal in 11 days	1
Total	148

Of 138 patients, eighty-three recovered by crisis and fifty-five by lysis. As crisis we have considered a drop of temperature to normal within twenty-four hours, accompanied by a corresponding general improvement. A more gradual decline in signs and symptoms we have called lysis.

A summary of the number of days the fever persisted after the first injection of serum is given in Table 3, which represents 148 patients who recovered from influenzal pneumonia. Three of this group later developed a hemolytic streptococcus bacteremia and empyema, followed by death. The other three necessary to make our group of 151 cases represent the deaths.

As indicated above, the greater number became normal within forty-eight hours after the first injection of serum.

TABLE 4.—FEBRILE PERIOD OF PNEUMONIA

Day of Termination	No.
First	9
Second	21
Third	42
Fourth	28
Fifth	19
Sixth	12
Seventh	5
Eighth	1
Ninth	1
Thirteenth	1
Undetermined	6
Total*	145

* There were six deaths.

The total febrile period of the pneumonia in this series of cases is given in Table 4. It will be noted that seventy-two, or 51.7 per cent., of this number ran a pneumonia course in three days, and that 119, or 85.6 per cent., were normal in five days. This is a decided shortening of the disease.

The length of time the lung signs persisted, after the temperature remained normal, varied as to the amount of lung involvement and the time in the pneumonic complication when serum was administered. Those cases in which serum was given early in the disease, before extensive consolidation occurred, cleared more readily, while in those treated later in the disease, the physical signs remained a week or ten days and in some cases beyond that period. A striking feature in many cases is the persistence of the signs of consolidation during convalescence.

In several cases that are not included in the 151 reported, serum was given before definite signs of consolidation appeared. That is, only râles were present, accompanied by a high temperature, following influenza. These patients promptly recovered and did not develop consolidation, and it is believed that pneumonia may have been prevented.

The data on white blood counts taken on the group are incomplete. We attempted to have such counts in all cases, but when we came to tabulate, we found that in the early part of the work a number had been missed. However, this group represents 130 cases (Table 5). It is quite evident from this table that the vast majority of our influenzal pneumonias have had either a normal white blood count or a leukopenia. The extra twenty counts represent additional counts in a number of the cases.

TABLE 5.—WHITE BLOOD COUNTS

	White Blood Counts	
Day of Pneumonia	10,000 or Under	Over 10,000
1	36	7
2	30	4
3	18	2
4	11	6
5	2	5
6	3	3
7	5	1
8	1	4
9	0	0
10	1	4
11	1	4
12	0	..
13	0	2
Total	108	42

It is noteworthy that all cases that did not respond readily to serum treatment were included in the group having high white counts, although many with high counts did respond readily. The foregoing group of high counts also includes all who showed the hemolytic streptococcus complication. Our differential counts show some tendency toward an increase in lymphocytes and a corresponding decrease in polymorphonuclear leukocytes; but there is no constancy in the findings.

It has been our custom to consider all patients with physical signs of pneumonia and a white blood count of 10,000 or 12,000 or under, as presumptive influenzal bronchopneumonias, and to start convalescent serum treatment immediately, especially if the history of onset is suggestive. But, if the count is higher, typing of sputum is done. Even if the count is high and pneumococci of Group IV are present, the convalescent serum is given with the idea that the Group IV may represent only a part of the infection or even only a mouth organism.

Complications were infrequent. One patient developed acute otitis media. One had intense jaundice, lasting over a week. Three had pleurisy, one phlebitis and two an evident relapse after an apparent complete recovery. Since the recurrence of the epidemic, among the last cases, seven streptococcic infections followed;

these were similar to the streptococcic pneumonias and empyemas present last winter. Six of these patients developed a streptococcic empyema, three of whom died. A pure culture of streptococci was obtained from the blood of one of the other patients. These streptococcic infections followed when the patients were convalescing from influenzal pneumonia, a normal temperature of from two to four days being present in the interval. This accounted for three of our deaths.

OUTBREAK ON THE YACONA

The U. S. S. *Yacona* left Bermuda, November 5. Influenza was epidemic, but reported to be well in hand there at that time. Eight hospital corpsmen of the Navy came North aboard the *Yacona* as passengers, having been on duty in Bermuda, assisting in the epidemic of influenza. They were left at New York. The ship arrived in New York on the 11th; liberty was granted; coal and provisions were taken on, and the ship sailed on the 15th for New London, arriving the same day. The first case of influenza developed in New London on the 18th, another on the 19th, and the third on the 20th. The ship sailed for Halifax on the 21st; six cases developed that day and she put into Boston, arriving the 22d.

Fourteen cases of influenza were admitted to the Naval Hospital, Chelsea, November 22; eighteen on the 23d; nineteen the 24th; nineteen the 25th; five the 26th, and two the 29th, a total of seventy-seven, plus three at New London, making a total of eighty cases of influenza from a crew of ninety-six. Seventy-four men and six officers developed the disease, or 83.3 per cent.

It seems probable that the source of infection was at New London, as the first case appeared three days after arrival there; this was well within the incubation period.

This outbreak was virulent, resembling the cases admitted during the early part of the epidemic in Boston. The patients were admitted with high fever, prostration, headache, injected eyes, dusky skin, albuminuria and low white blood counts.

The severity is well illustrated by the one death that occurred three days after the initial symptoms of influenza. The patient died of a diffuse bronchopneumonia, living only twelve hours after admission to the pneumonia ward, he being then semiconscious, with temperature, pulse and respiration very high. This is the shortest course of the disease of which we have record in this hospital.

TABLE 6.—SUPPLEMENTARY REPORT OF CASES OCCURRING ON THE U. S. S. YACONA

	No.
Complement, men	87
Officers	9
Total	96
Influenza cases	80
Bronchopneumonias	20
Deaths	1

Of the seventy-seven patients in this hospital, twenty developed pneumonia. All pneumonia patients received convalescent human serum immediately when a diagnosis of bronchopneumonia was made. Every influenza patient was examined at least daily to detect a beginning pneumonia, and twice daily if the temperature remained high beyond the second day of the influenza. One patient had a complicating Type I pneumococcus for which the appropriate serum was given. Two patients, after a prompt subsidence of the influenzal pneumonia, developed a streptococcic lung infection; one was complicated with empyema. These secondary invaders follow in the path of the influenzal pneumonia and are to be expected.

We believe that the low mortality was directly due to the use of convalescent human serum, as the patients immediately improved and rapidly recovered after its use: the serum was efficacious in this group of severe cases.

METHOD OF FOLLOWING CASES

The diagnosis of pneumonia in every case was made by at least two clinicians, and, in the majority of the cases, the diagnosis was confirmed by Dr. F. Van Nüys, Lieutenant, junior grade, U. S. N. R. F., one of the senior members of our medical staff, who was called in as a disinterested observer. Daily notes were dictated to a Red Cross worker in every case till the patient was convalescent. From these notes, from the laboratory reports and from the temperature charts, we have collected our data. The following is a statement from Dr. Van Nüys:

> Up to October 9, I treated pneumonia patients according to regular methods, with good nursing, fresh air, hydrotherapy and symptomatically with drugs.
>
> On the above date, I took clinical charge of that ward wherein serum treatment was being used.
>
> The contrast between the results of the two methods of treatment was very striking.
>
> In a ward under the old treatment, the atmosphere was predominately tragic—many patients desperately sick, cyanotic, dyspneic, coughing and often in agony. The convalescents were subdued by suffering about them.
>
> In the serum ward the atmosphere was that of hope and cheerfulness. A few patients were quite sick, but usually comfortably so. The rest practically convalescent.
>
> These contrasting pictures are fixed indelibly in my mind.
>
> With the old treatment, my mortality figures were close to 28 per cent.—identical with those of another pneumonia ward under Dr. Joseph A. Meledy.
>
> With the serum treatment, mortality was practically nil, except in those pneumonias entering too late for early use of serum.

PROCEDURE

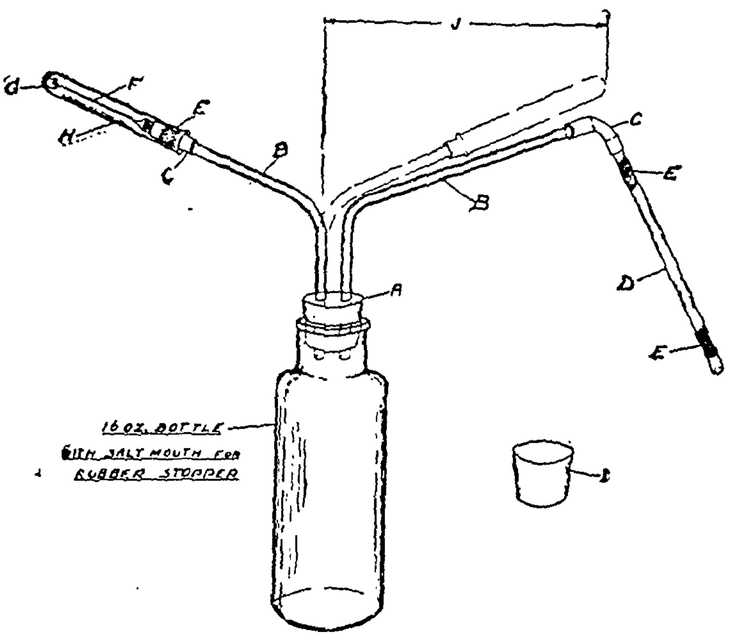
Routine Wassermann tests are done on all patients admitted with pneumonia so that by the time for bleeding there is no delay. In outside practice, blood is obtained at the time of the first injection of serum.

The amount of blood obtained from each donor totals about 1,000 c.c.; that is, about 500 c.c. are taken at two succeeding bleedings, at an interval of a day or two. No untoward symptoms aside from slight faintness in two or three have ever occurred in a series of over 500 donors, so we believe that 500 c.c. are well within the limits of safety in an adult weighing 120 pounds or more. Most patients seem to feel better after the bleeding, especially in the matter of an increased appetite.

The time of bleeding after temperature reaches normal has been set at about ten days. However, we have bled even earlier than this. For an upper limit, we have considered about six weeks. Naturally, this is arbitrary in the absence of any method of titrating the serum. However, at one time, we were short of serum and were compelled to use that obtained from men who had been well for from six to eight weeks. We were impressed with the lowered potency of this pooled serum.

The apparatus for obtaining blood, as shown in the accompanying illustration, is wrapped in cloth and autoclaved. Negative pressure is produced either by an assistant sucking on tube *E*, or by connecting an aspirating bottle to *E*, with a tourniquet adjusted on the donor's arm so that the pulse is still palpable; there is usually no difficulty in getting the desired amount. At times, especially if the donor has not been up, there is a collapse of the vein over the end of the needle. This is due chiefly to an improper adjustment of the tourniquet or too much negative pressure or both. This can frequently be remedied by having the donor open and close the hand. In obtaining blood from men, there is usually not enough discomfort to require the use of a local anesthetic, but in women, it is advisable to inject a little 1 per cent. procain at the point of proposed puncture. An equipment should include about ten complete bleeding sets with a dozen extra bottles. For centrifugalizing, 50 c.c. or larger tubes are advisable.

Preparation of Serum.—The blood is allowed to remain in the incubator at body temperature for an hour shortly after it is collected. By this time, if one is pressed for serum, he can obtain about 100 c.c. from each 400 or 500 c.c. of blood; otherwise the blood is placed in the refrigerator for from five to six hours, or over night. Then the serum is decanted and centrifugalized to clear it of any bits of fibrin or red cells, etc., after which all the serum obtained is pooled. To this pooled serum are added 20 c.c. of 1.5 per cent. tricresol made up in physiologic sodium chlorid solution for every hundred c.c. of serum so that the tricresol content is about 0.3 per cent. The serum is then stored in 120 c.c. amounts. Serum prepared this way has been used with excellent results six weeks after storage. Frequently what appears to be fat accumulates on the surface of the serum; this goes into solution on heating to body temperature, and apparently is of no significance.



Bleeding apparatus: *A*, two hole rubber stopper K-33; *B*, glass tubing; *C*, rubber tubing; *D*, glass tubing for suction; *E*, cotton plugs; *F*, 18 gage needle; *G*, stylet; *H*, small test tube; *I*, blank rubber stopper K-33; *J*, the left tube turned for convenience in sterilizing.

We formerly carefully took cultures of all serum before tricresolizing, but when we found no positive cultures of possible contaminating organisms in 200 serums, we considered the procedure sufficiently sterile to warrant the omission of cultures.

The amount of serum obtained from 500 c.c. of blood varies from 175 to 225 c.c. This seems to represent about the serum content of that amount of blood so that there is little, if any, waste of that part of the blood which contains all or most of the antibodies.

Administration of Serum.—We have found it convenient to give the intravenous injection of serum by means of a 120 c.c. glass syringe, or by the use of a 50 c.c. Lüer syringe connected to a three-way cock and proper tubing, as used in administering arsphenamin. Rarely does the procedure occupy more than ten minutes. The serum is first warmed to slightly above body temperature. We have given as high as 250 c.c. in one dose.

SERUM REACTIONS

While we were doing compatibility tests, four patients had chills lasting from ten to thirty minutes, coming on about thirty minutes after the administration. These chills on the whole were less severe than those following horse serum. Since the discontinuance of the compatibility tests and the pooling of serum, the percentage of chills has been about the same or less. There is usually a rise in temperature, pulse and respiration, shortly after the injection, but never any sign of anaphylaxis. Never have we seen urticaria at any time after the use of human serum, or other signs or symptoms of serum sickness.

It has been our desire, from the beginning, to run parallel control groups without serum treatment, with treatment by use of "normal" human serum, and with treatment by use of serum from those having had influenza without lung complication. For obvious reasons, we were unable to allow patients with the pneumonia complication to go without serum treatment. However, it seemed justifiable to give some men one dose of serum from normal individuals, or from those recovering from influenza alone. Again, we were unable to complete the experiments but were able to get suggestive evidence. The patients chosen for the experiments were taken at random from the groups as they were admitted. The results are reported for what they may be worth.

Incomplete experiments were conducted with pooled serum from men who never had influenza, so far as we could find. Serum was obtained from ten so-called "normal" donors. This was pooled and tricresolized, and then 100 c.c. were given to five influenza patients admitted to the ward. At the same time, three other patients taken at random received 100 c.c. of the "anti-influenza-pneumonia" serum. The next day, all who had received the "normal" serum showed the same or a higher temperature, while the three receiving the same dosage of anti-influenza-pneumonia serum showed a drop of temperature to normal. Unfortunately for scientific accuracy, we were compelled to give the anti-influenza-pneumonia serum to the other five patients instead of continuing treatment with "normal" serum. The five showed normal temperatures after the first injection of the anti-influenza-pneumonia serum. We feel that this is suggestive, but not conclusive, though it corresponds with similar experiments earlier in the epidemic.

Incomplete experiments were conducted with pooled serum from men who had influenza and who never showed definite consolidation. Serums from five such patients were pooled and tricresolized, and a 100 c.c. dose was given to each of three patients sent to the pneumonia ward. Two others were given an equal dose of immune serum. Two of the first group showed slightly higher temperature the next morning; one showed a drop of 2 degrees. The two receiving the immune serum showed a normal temperature the next morning. On further examination, it was found that all had a definite area of consolidation except the man receiving "normal" serum, whose temperature fell 2 degrees. The first two showed a normal temperature sixteen hours after the injection of 100 c.c. of immune serum. Here again evidence is incomplete, but suggestive, as noted in the previous article.

In addition to the foregoing experiments, it was early noted by us, when serum from single patients was being used, that certain serums had no measurable effect. On further investigation, it was invariably found that such serums came from men who had only a small lung involvement, or had only a small involvement and had recovered rapidly under serum treatment, or else had been obtained from individuals in whom the disease had run a long course with a swinging temperature and an increasingly high white count. Because of earlier findings in a few mild cases treated with serum, we were led to state that patients who had received serum did not yield potent serum. However, recent experience has demonstrated that serum from such patients has potency equal to that from untreated patients.

COMMENT

From the data presented, it is evident that a low white blood count is characteristic of the usual bronchopneumonia following influenza. Hence it is of prime importance before serum therapy is instituted. In our experience, a low respiration and low pulse rate, compared to the lung involvement and high temperature, aid in making a diagnosis of influenzal pneumonia.

At present, the only method of testing the potency of the convalescent serum is by its effect on the patients. In our observations here, it would seem that one of the first reactions is against toxic symptoms, such as nausea, vomiting, vasomotor disturbances and loss of appetite, so that it might be safe to say that the serum has some antitoxic action. Beyond this, we believe that discussion at the present time would be futile.

The method of obtaining and administering the serum has been reduced to its simplest form, so that little difficulty need be experienced in establishing the treatment, at least in centers. At the present time we would suggest the establishment of bronchopneumonia wards in various hospitals, with one man in charge of the serum treatment. Then by starting with four or five donors recently recovered from the disease, sufficient serum can be obtained to institute treatment. This, once started, can be continued, provided sufficient interest is taken in the procedure. We are convinced that the results will fully repay one for the effort.

That the tricresol is not an important factor in the results obtained is evidenced by the fact that no difference has been noted in the action of the preserved and unpreserved serum.

Influenza patients who have a continuous high temperature persisting over three days, or who have a secondary rise of temperature immediately following influenza, should be regarded as probably developing influenzal pneumonia. Signs of consolidation may not be present at this time, but patches of fine râles can usually be found. These signs, taken in conjunction with a persistent low white blood count and in the absence of other complications, almost invariably mean a beginning influenzal pneumonia. This is the most favorable time to start serum therapy. If serum is given at this early stage of pneumonia, favorable reaction is universal. If one depends on a rising pulse and respiration, as well as on the high temperature, he will frequently allow a patient to pass beyond the time most favorable for any kind of serum therapy.

SUMMARY

Out of 151 patients with bronchopneumonia following influenza treated by human convalescent serum, three have died without complications, and three have died after a complicating hemolytic streptococcus empyema, making a total of six deaths, or 4 per cent.

Most of the cases were treated early in the pneumonia complication, and hence were well suited for serum treatment.

Out of 151 patients, 132 received three doses of serum or less; about two thirds required only two doses, and over one third but one injection. Those who received more than one injection for the most part had advanced to at least two days in their pneumonia. The average dose used here is 120 c.c.

Out of the 138 patients, eighty-three recovered by crisis, and fifty-five by lysis.

In 148 cases, over half showed a normal temperature within forty-eight hours after the beginning of serum treatment.

The febrile period of the disease was decidedly shortened, though the lung signs persisted.

Several cases without definite signs were treated with serum. These are not included in the group reported. In some of these cases, it would seem that possibly a pneumonia was prevented.

Incomplete experiments with pooled "normal" serum and with pooled serum from uncomplicated influenza patients indicate a lack of curative power in such serums. Pooled serum from patients treated with immune serum seems to have about the same potency as that from the earlier untreated cases.

Over half the cases treated were received during the recent recrudescence of the epidemic, when there has been no doubt about the severity of the pneumonia complication. Complications have been infrequent.

There has been no increase in chills since the compatibility tests were discontinued. We have never seen urticaria or any other signs of serum sickness after the use of human serum.

Bronchopneumonias with a white blood count below 10,000 or 12,000 are most favorable for treatment with this serum, though a number with much higher counts responded readily.

CONCLUSIONS

Pooled serum from convalescent influenzal bronchopneumonia patients at this hospital has greatly reduced mortality, has shortened the course of the disease, and has proved almost a specific, not only during a waning epidemic but also during the more recent severe recrudescence.

U. S. Naval Hospital.

Treatment of Chronic Asthma.—Dr. M. Machado emphasizes the necessity for putting an end to the predisposition which brings on the attacks of true asthma. This constitutional predisposition is best combated, he has found in his experience, by iodid and emetin. "The iodid acts on the structure and functioning of the cells while the emetin regulates the apparatus of the internal secretions. The two combined break up the diathesis which is responsible for the asthma." He gives the emetin by injection of 0.04 gm., increasing by 0.01 gm. a day until the dose is 0.08 gm.—a total up to 0.30 or 0.38 gm. in the course of five or six injections. After this he gives a course of sodium iodid by intravenous injection of 20 c.c. daily or on alternate days, increasing by 10 c.c. each time until the 100 c.c. dose is reached. From twenty to thirty injections may be required to overcome the chronic tendency to asthma. It only gradually subsides. There has never been recurrence in any of his cases thus treated; in some the interval since has been three years. His communication appeared in the *Gazeta Medica da Bahia,* **50**:97 (September) 1918. No further details of the technic are mentioned.

MENINGEAL CONDITIONS NOTED DURING THE EPIDEMIC OF INFLUENZA

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In reviewing the cases of meningeal involvement developing during the epidemic of influenza, my attention has been drawn to three points:

1. Very few cases of meningitis have been due to the influenza bacillus. I have seen two cases, and have examined the fluids of a third. In previous years, I have seen as many in an equal length of time. If this epidemic was due to the influenza bacillus, it seems strange that it did not more frequently invade the meninges.

2. During October and the early part of November, I saw a larger number of cases of epidemic meningitis than is usual at that season, and the number dropped off subsequently. The great majority of these cases gave a history of an attack, clinically influenza, immediately preceding the development of the meningitis. In some instances, the meningitis appeared as the influenza was subsiding, in other instances after convalescence was established. The cases themselves were not unusual in any way. Some were mild and some severe—about as the cases usually run. Cultures of the spinal fluids were made on blood as well as on glucose ascitic agar to see if any hemoglobinophilic bacilli were present with the meningococci, but there was no evidence of a mixed infection.

Whether the resistance of the individual, both generally and locally in the mucous membrane of the nasopharynx, was lowered by the attack of influenza, thus making him fall more readily a victim to meningitis, or whether the meningococcus attained a heightened virulence through its association with the causative agent of the influenza epidemic, is a question entirely open to discussion.

3. In about twenty instances, I have seen cases, usually during the convalescence from attacks clinically influenza, in which meningeal symptoms have developed. There were present headache, some stiffness of the neck, Kernig's sign, and extreme apathy and drowsiness—in many ways the picture of an early tuberculous meningitis. Lumbar puncture has revealed a clear fluid under increased pressure. This fluid has shown an increase from slight to marked, in the number of cells, with a preponderance of mononuclears, a well marked increase in the albumin and globulin, a normal reduction of Fehling's solution, and no organisms either by smear or culture. In most instances a Wassermann test has been performed, and in all cases have been negative. Guinea-pigs inoculated with a number of the fluids suffered no ill effects. Such a spinal fluid in no way suggests the invasion of the meninges by a pyogenic micro-organism. The mononuclear cells and the normal reduction of Fehling's solution are practically never present in a pyogenic meningitis. This in addition to the absence of organisms by smear and culture is evidence against a meningitis.

This spinal fluid reaction is quite different from that usually found in meningism occurring in pneumonia, gastro-intestinal conditions in children, and acute infections. In these conditions, while the meningeal symptoms are often more pronounced than in the cases I have been describing, the spinal fluid, with rare exceptions, is normal in the chemical and cytologic constituents. The exceptions referred to occur mainly after severe and prolonged convulsions, in the convulsive type of whooping cough, and in cases in which the puncture has been done shortly before death, the circulation having been depressed for some time. In these instances, the changes in the cytology and chemistry are, as a rule, less than have been found in the influenzal cases. The spinal fluid changes that I have just described are similar to those in cases of poliomyelitis and poliencephalitis. From the spinal fluid examinations and the clinical picture it seems possible that we are dealing with an encephalitis secondary to the influenzal attack. With one or two exceptions, the patients have improved after the lumbar puncture and made a good recovery.

Two cases have been a little different from the others:

One of the patients developed motor disturbance—weakness of the muscles of the feet and some paralysis of the fifth nerve. The spinal fluid showed a very marked increase in the albumin and globulin, and a slight increase in the number of cells. The reduction of Fehling's solution was normal. The gold chlorid curve was 00012455550. The Wassermann test was negative. The condition of this patient completely cleared up.

The other patient showed a good deal of mental disturbance, which has continued for over six weeks. It takes the form of a delirium, developing suddenly at intervals and lasting from ten to fifteen minutes. At other times the mentality is clear. He has had four lumbar punctures, and the spinal fluid has remained practically unchanged. He has a considerable degree of arteriosclerosis, without a greatly increased blood pressure.

Menninger[1] recently described nearly a hundred cases of psychoses following influenza. In his cases the spinal fluids were negative, with one exception.

Three cases recently seen in the Willard Parker Hospital have been of a more severe type than the earlier cases and somewhat different. Two of these patients have shown marked tremor. One of these has been delirious; he is still living. The other showed marked cardiac and respiratory arrythmia suggesting an involvement of the cardiac and respiratory centers. This patient died. The third lies motionless with the limbs rigid, has to be fed by gavage, and his face has the masklike expression described by the English writers in connection with cases which they have been reporting under the diagnosis of lethargic encephalitis. All these cases bear a resemblance to the descriptions given of this condition, which has been somewhat prevalent in England for about a year. The changes in spinal fluids in the cases I have seen seem greater than the changes the English have reported, but they have not done lumbar punctures in all their cases and they do not state at what stage of the disease the punctures were done. Moreover, different workers read chemical and cytologic changes in the spinal fluids differently.

Accounts of lethargic encephalitis have been given by Buzzard[2] and by Hall,[3] and it has been discussed editorially in THE JOURNAL.[4]

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[1] Menninger, K. A.: Psychoses Associated with Influenza, J. A. M. A. **72**: 235 (Jan. 25) 1919.

[2] Buzzard, E. F.: Lancet **2**: 835 (Dec. 21) 1918.

[3] Hall, A. J.: Brit. M. J. **2**: 461 (Oct. 26) 1918.

[4] Enceptalitis Lethargica: A New Disease? editorial, J. A. M. A. **72**: 414 (Feb. 8) 1918.

LETHARGIC ENCEPHALITIS

PRELIMINARY REPORT

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Last fall The Journal called attention editorially[1] to a series of small epidemics which had been reported during the spring in England and France and which were characterized by cranial nerve palsies, and fever. The French epidemic presented a mortality of 50 per cent., the fatal cases being due to the involvement of vital bulbar centers. The disease was variously regarded as botulism, poliomyelitis and some new infection, although the bacillus of botulism had not been isolated and there were reasons for doubting its identity with poliomyelitis. The spinal fluid in these cases was spoken of as being normal, and the spinal nuclei were apparently never involved. Of the cranial nerves, those having to do with the extra-ocular muscles were so commonly involved that the disease came to be spoken of as infectious ophthalmoplegia. Besides the third, fourth and sixth, the seventh, ninth, tenth and twelfth were said to be sometimes affected. Other symptoms spoken of as common were nystagmus, tremor, drowsiness, delirium, asthenia, retention of urine and constipation. The Journal also lists in its index a number of articles under the caption "lethargic encephalitis," which describe somewhat similar cases in France, Italy and South America. Drowsiness and coma were prominent in these cases.

At Camp Lee there were recently observed a number of cases which seem to fall into this general category, and it seems worth while to publish a preliminary report, as there is some probability that the disease will become much more widespread. The commonest features observed in these cases are vertigo, diplopia, headache, slight fever and a spinal fluid showing a definite pleocytosis (from 20 to 66 cells) of the lymphocytic type. There have been some variations, which will be noted in the case histories. It is worth while recording that there have been no cases of frank poliomyelitis in this camp. The patients came from widely separated organizations. The only fatal case was the first, which will be reported more in detail.

REPORT OF CASES

Case 1.—*History.*—A corporal, C. O. T. S., aged 23, admitted, Oct. 23, 1918, had had an attack of influenza six weeks previously. October 28, he had noticed diplopia and some difficulty in swallowing. He was conscious, rational, and febrile except for part of one day. Of the cranial nerves there was bilateral involvement of the third, sixth, ninth and twelfth. There was no spasticity, and the reflexes and sensation were normal. The eye grounds were normal except for slight engorgement of the veins. Physical examination was otherwise negative. The pulse was slightly accelerated (averaging 90). Leukocytes, October 30, were 9,200; polymorphonuclears, 58 per cent.; lymphocytes, 30 per cent.; large mononuclears, 10 per cent.; transitionals, 2 per cent. The spinal fluid, October 30, was sterile, with 85 cells per cubic millimeter; the globulin test was negative, sugar present, Wassermann test negative. The blood Wassermann was ± (there was no history of infection). The patient showed intermittent difficulty in breathing, and died, November 2, of respiratory failure.

Necropsy.—Opening of the spinal canal disclosed the cord with its membranes lying in the spinal canal without distortion or bulging of the meninges. When the membranes were opened, the blood vessels of the posterior surface of the cord were found tortuous and filled with blood; but the surface of the cord, and the membranes, presented no sign of inflammation. There was no exudate nor excessive fluid in the meningeal space. This description of the cord applies to the different areas of the cord, including the upper cervical region. On section of the cord in the cervical region, on gross examination, there was apparently no change in the cross section of the organ. As one reached the middle dorsal region, going down to the lumbar region, the cord was found to be very much softer, especially in the middle dorsal region. This became less marked as one went down the cord toward the lumbar region. These changes may have occurred postmortem, as they were noted in the most dependent portion of the cord.

On removal of the skull, the dura remained adherent to the calvarium. The hemispheres presented no thickening of the pia mater, but the vessels were very much engorged and arborescent over the convolutions. On removal of the cerebrum, the base of the organ presented the same appearance as the surface; the vessels were arborescent, and there was no thickening of the pia and no exudate.

The pituitary body and the optic chiasm presented nothing of note.

On section of the hemispheres, the centrum ovale presented dilatation of the blood vessels, which appeared as small, punctate bodies throughout the surface. On inspection, the corpus callosum appeared normal; but on attempt to section, it was found to be soft and mushy. All the tissues of the lateral ventricles were soft. The optic thalamus was softened. The velum interpositum and the choroid plexus presented the same condition as the vessels of the surface of the brain: that is, the vessels were prominent, tortuous and arborescent. There was no excess of fluid in the ventricles, but all the tissues surrounding them were softened, the brain substance as well as the tissues of the floor. The third ventricle presented nothing of note, except general softening of the tissues of the floor. The pineal gland was swollen. The iter a tertio ad quartum was patulous. On section of the basal ganglions a small hemorrhagic spot was found in the right hemisphere immediately adjoining the internal capsule. This spot was about 1 mm. in diameter. On the left side, the basal ganglions presented nothing of note. Anteroposterior sections through the hemispheres presented nothing of note. Sections through the cerebellum presented nothing of note. There was, however, a universal softening of the brain tissue which made it very hard to section without destroying it in the attempt. After sectioning, the organ was apparently collapsed, and there was no possibility of returning the sectioned portion back to the former relation on account of this softening.

The dura through the base of the skull was glistening and smooth, and presented nothing of note.

The findings otherwise were negative.

Case 2.—A first lieutenant of Company D., Sixty-Second Infantry, aged 26, admitted, Dec. 24, 1918, had had an attack of influenza two months previously. For two days he had noticed diplopia, headache, anorexia and constipation. He stated that he had sometimes had diplopia before when his digestion was out of order. Examination disclosed weakness of the right sixth nerve, and absence of the cremasteric and right plantar reflexes, but otherwise was neurologically negative. The next day the plantars were normal and there was some increase of the biceps and right knee jerk. There was fever with a maximum temperature of 102, for four days, by which time the patient felt well. The urine was negative, leukocytes, December 24, 8,550; polymorphonuclears, 45 per cent.; lymphocytes, 43 per cent.; large mononuclears, 6 per cent.; eosinophils, 4 per cent.; basophils, 2 per cent. The spinal fluid, December 26, showed 4 cells per cubic millimeter; the globulin test was negative; sugar was present.

The transient sixth nerve palsy with fever seems to justify the inclusion of this case in the series, in spite of the negative spinal fluid and history of previous trouble with vision.

Case 3.—A private of the 305th Fire and Hose Company, Q. M. C., aged 31, admitted, Jan. 18, 1919, had had influenza in October, 1918. He noticed diplopia the day before admission, and complained of headache, vertigo and constipation. There was slight fever for twelve days, with gradual clearing up of symptoms. Neurologically the examination was negative except for sixth nerve palsy, and nystagmus. The urine was negative. The leukocyte count, February 4, was 7,200; polymorphonuclears, 67 per cent.; lymphocytes, 24 per cent.; large mononuclears, 8 per cent.; esinophils, 2 per cent. The spinal fluid, February 4, showed a slight increase of pressure, 20 cells per cubic millimeter; 88 per cent. lymphocytes, and 12 per cent. large mononuclears. The globulin test was negative; sugar was present; the Wassermann test was negative.

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[1] Is Epidemic Poliomyelitis Prevalent in England and France? editorial, J. A. M. A. 71: 1221 (Oct. 12) 1918.

SPINAL FLUID

Case	Day of Disease	Cells	Lymphocytes	Large Mononuclears	Polymorphonuclears	Globulin	Sugar	Wassermann
1	3	85	..	..	..	minus	plus	minus
2	4	4	..	..	..	minus	plus	
3	18	20	88	12	..	minus	plus	minus
4	15	64	93	5	2	minus	plus	minus
5	15	40	74	26	..	minus	plus	minus
6	10	66	92	8	..	minus	plus	minus
7	4	7	..	..	..	minus	plus	minus
8	15	29	92	8	..	minus	plus	minus

Case 4.—A corporal, Company 6, Second Battalion, D. B., aged 23, admitted, Jan. 23, 1919, had acute otitis media, January 1, which had completely healed. For four days he had complained of diplopia and vertigo, and later of nervousness, insomnia, weakness and constipation. The retinal veins were swollen and the left disk blurred. There was no evident defect in muscle balance when examined; the knee jerks were exaggerated and later transient, but there was well marked ankle clonus. Otherwise the neurologic examination was negative. There was slight fever for ten days, which gradually improved. The urine was negative. The leukocyte count, February 6, was 7,600; polymorphonuclears, 69 per cent.; lymphocytes, 22 per cent.; large mononuclears, 8 per cent.; eosinophils 2 per cent. The spinal fluid, February 3, showed 64 cells; there were 93 per cent. lymphocytes, 5 per cent. large mononuclears, and 2 per cent. polymorphonuclears. The globulin test was negative; sugar was present; the Wassermann test was negative; the spinal fluid was sterile.

Case 5.—A private, Company 1, First Battalion, I. R. T. C., aged 22, admitted, Jan. 24, 1919, had had influenza in October. For four days he had complained of vertigo, nervousness, insomnia, and "gas in stomach." There was no diplopia. Examination was neurologically negative except for irregular pupils and rather overactive knee jerks. Low fever and vertigo led to lumbar puncture, February 4, which revealed 40 cells per cubic millimeter, 74 per cent. of which were lymphocytes; the globulin test was negative; sugar was present; the Wassermann test was negative. The blood and the urine were normal. The leukocyte count, February 4, was 9,000; polymorphonuclears, 72 per cent.; lymphocytes, 22 per cent.; large mononuclears, 4 per cent.; eosinophils, 2 per cent. Although this patient complained of no diplopia, the vertigo suggests that there may have been some muscular defect, as in the other cases, although not enough to cause double vision.

Case 6.—A private, Company 10, Third Battalion, I. R. T. C., aged 24, admitted, Jan. 31, 1919, a week before admission began to complain of headache, constipation, nausea, diplopia and vertigo. Examination revealed external ophthalmoplegia, overactive knee jerks, and temperature ranging from 98 to 100. The leukocyte count, February 4, was 8,200; polymorphonuclears, 62 per cent.; lymphocytes, 26 per cent.; large mononuclears, 10 per cent.; eosinophils, 2 per cent. Examination of the spinal fluid, February 3, revealed 66 cells; 92 per cent. lymphocytes, and 8 per cent. large mononuclears. The globulin test was negative; sugar was present; the Wassermann test was negative.

Case 7.—A first lieutenant, M. C., of the mustering office, aged 31, admitted, Feb. 3, 1919, four days before admission noticed vertigo, weakness, drowsiness, slight rhinitis, photophobia and diplopia. He also complained of a sensation of "thickness of the tongue." After admission to the hospital no diplopia nor neurologic defects could be made out. The temperature was normal, the urine, blood and spinal fluid, February 3, normal, the latter showing 7 cells per cubic millimeter. There was no globulin; sugar was present. The Wassermann test was negative.

Case 8.—A private, Company I, Sixty-Second Infantry, aged 24, admitted, Jan. 31, 1919, about ten days before admission began to complain of vertigo, and later of weakness and constipation. After admission he was very drowsy, being aroused with difficulty. There was continued high fever; February 3, mild delirium; February 4, difficulty in swallowing, and February 5, left facial palsy. He was still seriously ill. Blood culture was sterile, Feb. 2 and 4. The leukocyte count, February 4, was 7,900; polymorphonuclears, 67 per cent.; lymphocytes, 20 per cent.; large mononuclears, 12 per cent.; eosinophils, 1 per cent. The spinal fluid, February 5, was under increased pressure, and showed 29 cells per cubic millimeter, 92 per cent. lymphocytes, and 8 per cent. large mononuclears.

The eight cases occurred in a comparatively short space of time. They were characterized by a tendency to cranial nerve involvement, fever, and slight changes in the spinal fluid. An increase in their occurrence is to be expected.

VESTIBULAR REACTIONS IN FIVE HUNDRED AND FORTY-ONE AVIATORS

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It is well established that the vestibular apparatus—the internal ear, its nerve pathways and centers—is a mechanism of great importance.

Without dwelling too much on the requirements for an aviator, attention is called to the fact that an excellent physical equipment is demanded of the man who qualifies for flying; hence the rigid examination that is given, which includes the usually accepted methods of examining the vestibular apparatus.

For more than a year, while at work in the Air Service Division, Surgeon-General's Office, I had the opportunity of organizing physical examining units in different parts of the country, which enabled me to study various types of applicants, and at the same time gave me a chance to develop a constant technic in the examining work.

AVERAGE NYSTAGMUS OF FIVE HUNDRED AND FORTY-ONE AVIATORS

Number of Men Examined	Flying Period, Hours	Average Nystagmus	
		Turning to Right Seconds	Turning to Left Seconds
156	0 to 25	25 49/156	25 25/156
169	25½ to 50	25 85/169	25 40/169
59	50½ to 75	19 1/59	18 27/59
37	75½ to 100	24 19/37	25 4/37
21	100½ to 150	25 18/21	25 8/21
34	150½ to 200	26 4/34	25 8/34
32	200½ to 300	23 5/32	23 12/32
14	250½ to 300	23 9/14	25 5/14
19	300½ to 1,000	26 4/19	25 11/19

It is with the vestibular reactions that this paper deals, owing to the amount of discussion in certain articles concerning these tests, and the doubts cast regarding their value. In these papers statements have been made that repeated stimulation, such as experimental whirling or flying, lessens the reactions. If this were so, it would be an important point in considering aviation, because aviators are subject to constant stimulation of the vestibular apparatus during flight. After the aviator had flown for a while there would be no means of judging the condition of this mechanism because of the absence of nystagmus and vertigo; for the loss of these reactions is significant of some impairment of the vestibular apparatus.

With this in view, a series of examinations were made of fliers from Barron, Carruthers and Taliaferro fields. The data presented in the accompanying table are from the first 541 cases examined, the amount of flying varying from that of cadets just arriving to officers who had flown 1,000 hours.

The average nystagmus of accepted applicants from data given by sixty-seven physical examining units showed on turning to the right, 23 seconds and on turning to the left, 23.1 seconds; without dividing this series by the hours of flying, the average on turning to the right was 24.6 and on turning to the left 24.4 seconds. It will be noted that the average nystagmus of the series is slightly higher, probably owing to the fact that there were few fliers examined with less than 20 seconds' nystagmus, while in the examining unit work there were a great many more.

SUMMARY

It is found that nystagmus is not diminished by repeated turnings.

Although vertigo was not timed, past-pointing and falling were slightly diminished in fliers of 100 hours' or more experience, being most noticeable in fliers who have had the greatest number of hours.

As past-pointing and falling are objective signs of vertigo, this diminution was due to the fact that the flier had learned to interpret this vertigo and for the same reason more rapidly recovered his poise.

THE BACTERIOLOGY OF EPIDEMIC INFLUENZA AND PNEUMONIA*

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Perhaps the simplest and most obvious inference that can be drawn from a consideration of the epidemic of influenza that has just passed through this country is that it was something unusual, something that had not been seen for many years, and something that has departed leaving few representative cases that can be regarded as typical instances of the disease. Whatever the cause of the disease may be, it is clear that this agent is one to which the body is not accustomed. In fact, it would almost seem necessary to postulate at the outset that this agent is not commonly present in the body under normal circumstances, because it is difficult to conceive that any bacterium or virus that is even partially adapted to the environment of the human body should suddenly become unadapted and assume such a high degree of invasiveness as the agent of influenza possesses. Moreover, if the cause of influenza is some bacterium or virus related to a variety of bacterium or virus commonly present in normal individuals, then it would seem necessary to postulate that the cause of influenza is a very highly individualized variety.

Without doubt, the epidemic just past is of essentially the same nature as the epidemic of 1889. Then, as in the epidemic under discussion, clinicians recognized two phases or features in the disease: first, the "influenza" proper, which lasted from three to seven days, and the complications which were regarded as secondary and not part of the original disease, though directly due to the damages that it caused. The descriptions of the disease, in England by Robertson and Elkins,[1] in Germany by Strumpell,[2] and in France by Duflocq,[3] make these points clear.

The present report deals with a study of cases of influenza at Camp Lee and Camp Dix. The cases studied at Camp Lee were typical of the disease, the fatal cases being complicated by pneumonia. The studies at Camp Dix were made when the epidemic had abated, and presented more complications, with correspondingly complicated pathologic and bacteriologic findings. A brief description of a typical case at Camp Lee reveals a perfect similarity with the descriptions given in 1889. The prominent features were sudden onset; headache; pain in the back and throughout the body; intense prostration and weakness; signs of conjunctivitis, coryza, sore throat and bronchitis that varied in intensity; scanty nasal and bronchial discharge; fever, and leukopenia. Nosebleed was not uncommon. The conjunctivae were sometimes very red. The throat was usually not markedly inflamed. There were a few cases with barking cough. The most striking symptom was weakness. The conjunctivitis, the bronchial signs and the leukopenia made a case resemble measles—without the eruption. These patients usually recovered in from three to five days, unless pulmonary complications developed.

The object of this study was to determine, if possible, by cultural methods, the bacterial agents operating in these cases. For this purpose, smears and cultures of the nose and throat, in the early cases, were examined; blood cultures were made in the cases of pneumonia; the sputums were injected into white mice, and finally, cultures were made at necropsy.

METHODS

1. In studying the secretions from nose and throat, the culture medium used was blood agar made by adding 5 per cent. human blood to meat infusion agar that was neutral or nearly so, in reaction, phenolphthalein being used as the indicator. Cultures were made by streaking blood agar plates with the cotton swabs that were used in taking the nose and throat cultures, further distribution of the streaks being effected with a platinum loop. Smears on glass slides were made at the same time and stained with Gram and Hiss capsule stains.

It may be noted that although it is now known that the best medium for the cultivation of the Pfeiffer bacillus is agar to which blood has been added while the agar was hot (about 90 C.), the reports so far issued are based on results obtained with the use of plain blood agar. Accordingly, it may be said that the results herein reported are perfectly comparable with the results of others.

In searching for colonies of Pfeiffer bacilli on blood agar plates, it was found that often two or three days were necessary for development of the colonies. At first, owing to the great amount of material to be examined, this time was allowed accidentally as a result of delay; later, all cultures were purposely kept for at least three days before being discarded.

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*From the Walter Reed General Hospital.

[1] Robertson, G. M., and Elkins, F. A.: Brit. M. J. **1**: 228, 1890.
[2] Strumpell, A.: München. med. Wchnschr. **37**: 90, 1890.
[3] Duflocq: Rev. de méd. p. 85, 1890.

2. The common method used in making blood cultures was by adding 5 c.c. of blood to each of two flasks of infusion broth; but in about twenty instances plates were poured also, in which 1 and 2 c.c. of blood and 12 c.c. of melted infusion agar were used.

3. Sputums were thus examined: Smears were made on slides and stained by gram and capsule stains. Washed portions were streaked on blood agar plates, and were injected intraperitoneally into white mice, and the latter, after death, were examined in the usual way for pneumococci and cultures of the exudate made on blood agar and smears of the exudate examined microscopically.

4. For examining specimens at necropsy, blood agar plates were used, except in the case of body fluids, which were put into plain broth, as well.

RESULTS

1. *Nose and Throat Smears and Cultures.*—This portion of the study was made entirely at Camp Lee, at a time when the epidemic was at its height and typical cases were daily entering the hospital in great numbers.

A. Smears: It was considered very important to examine direct smears from the nose and throat, since it seemed logical to expect to find the Pfeiffer bacillus in large numbers in these discharges if such were the cause of the disease. Forty-nine patients in one ward were studied. This number included about ten who had already developed pneumonia. The same swab that had been used in making cultures was rubbed on a glass slide. The smear was stained by Gram and capsule stains and an examination made to determine the character of bacteria present. Of these forty-nine cases, thirteen showed minute gram-negative bacilli which resembled the Pfeiffer bacillus.

B. Cultures: Of the forty-nine patients whose nasal and pharyngeal secretions were studied by direct smear, there were two who yielded cultures of Pfeiffer bacilli. Attempts to transplant these cultures to blood agar resulted in failure of growth. Besides these patients, seventy-four early cases were examined, sixteen of which were examined on admission to the hospital, and fifty-eight in regimental infirmaries. Of this group of seventy-four cases, three gave cultures of Pfeiffer bacilli.

Of 123 throat cultures, therefore, Pfeiffer bacilli were found five times. That this number is too small is indicated by the fact that minute gram-negative bacilli were found in direct smear in 26.5 per cent. of the forty-nine cases examined. There is no doubt that the use of blood agar plates is ineffective in detecting cultures of Pfeiffer bacilli in all cases in which they occur.

2. *Blood Cultures.*—Except in the few instances in which pneumococci were isolated, no positive cultures were obtained. This result is therefore of negative value. One hundred and thirty-six cultures were made in the manner described, with positive pneumococcus cultures in five instances.

3. *Sputum Examinations.*—Sputums were examined from sixty-five patients by the methods described above. Pfeiffer bacilli were seen in the smears of peritoneal exudate and obtained in cultures therefrom in eighteen instances, or 27.6 per cent. Other bacteria accompanied these. Of the pneumococci, Type I occurred five times; Type II, twice; Atypical II, six times; Type III, once, and Type IV, thirty-two times.

4. *Smears and Cultures of Necropsies.*—The results obtained at Camp Lee are considered separately from those at Camp Dix, because the course pursued was somewhat different. The same kind of culture medium was used at the two places, but at Camp Dix, the trachea was examined in all cases, and portions of the lungs were injected into white mice. As stated before, the situation at the two camps was different in that the necropsies at Camp Lee were performed on persons who had died in the beginning or middle of the epidemic, while at Camp Dix, the epidemic had passed, although there were many cases of pneumonia in the hospital, and the quarantine had not been abolished. Most of the necropsies were performed by Dr. MacCallum. His descriptions appear elsewhere.

A. Smears: Forty-four necropsies were studied at Camp Lee. Particular attention was paid to the examination of direct smears from the lungs in these cases, since this point was emphasized by Pfeiffer. However, the lungs did not present the features characterized by Pfeiffer as typical of infection by the Pfeiffer bacillus. In his cases, purulent bronchitis and purulent bronchopneumonia were the typical lesions, and smears of the pus from such sources revealed usually great numbers of tiny gram-negative bacilli in the leukocytes.

The most striking feature of the smears of lung tissue from the necropsies at Camp Lee was the small number of pus cells in the majority of instances, although in most of the cases the patients were ill at least a week. In most instances the smears showed great numbers of red blood cells and enormous numbers of pneumococci. The latter could easily be distinguished by their shapes and capsules. Furthermore, the bacteria seen in greatest number in the smear were correspondingly prominent in the cultures. In other words, the evidence revealed by the smear was an accurate index to the result of the culture. There were three cases in which Pfeiffer bacilli appeared in the smears and cultures. These cases differed from the others in having very few bacteria in the smears.

There were also nine cases in which hemolytic streptococci were present in the culture, in all but two of which very few bacteria appeared in the smears.

B. Cultures: Of the forty-four cases under consideration, three yielded cultures of the Pfeiffer bacillus; seven of hemolytic streptococci, alone; two of hemolytic streptococci with pneumococci; twenty-eight of Pneumococcus IV, alone; two of Pneumococcus IV with hemolytic streptococci; one of Pneumococcus I, and one of pneumococcus (untyped). Two cases yielded a number of kinds of bacteria the identity of which was not determined.

These cultures were taken from the lungs, heart blood, spleen and from the exudate from the pericardial and pleural cavities, if such exudation occurred. Besides the bacteria referred to, there were frequently colonies of staphylococci, gram-negative diplococci, probably of the *M. cartarrhalis* variety, and coarse colonies of small gram-negative bacilli resembling Friedländer bacilli.

The number of times that pneumococci occurred in smears and cultures, almost to the exclusion of other bacteria, left no doubt concerning the pathogenic activity of these organisms; but since they are very commonly present in the mouth, no association with the disease "influenza" was suggested.

CASES AT CAMP DIX

There were ten necropsies. In general, the number of kinds of bacteria was greater than at Camp Lee. Cultures were made from the trachea in all cases; from the bronchi in six, and from the accessory sinuses in two cases in which these cavities were involved; from the lungs in all cases; and portions of lung tissue were ground and injected intraperitoneally into white mice. Smears were made from all these sources. The cultures of the trachea were made by snipping small pieces of the mucosa and rubbing these on blood agar.

Three cases stood out from all the others. In these the smears from the trachea showed large numbers of pus cells, and large numbers of minute gram-negative bacilli. The bronchi and lungs displayed the appearances described by Pfeiffer. In the cultures from these cases the predominating organism was the Pfeiffer bacillus. In one case, no other bacteria appeared in the cultures from the bronchi and lungs; in the other two, staphylococci were also present. It was striking that all the mice inoculated with lung tissue in these cases survived. No other cases yielded Pfeiffer bacilli in the cultures of the lungs, although five others showed these bacilli in cultures from the trachea or bronchi. In three cases Pneumococcus IV occurred in the lungs and heart blood, and in two of these, in the pericardial fluid and abscess of the rectus muscle as well. Hemolytic streptococci occurred in the lungs in two cases, and in two cases there were mucoid colonies of small gram-negative bacilli which resembled Friedländer bacilli and which grew in company with Type IV pneumococci. One case gave a rich culture of *M. catarrhalis* together with untyped pneumococci, from the lungs. In one case, Pneumococcus III occurred in the lungs, heart blood, pleural and pericardial fluids.

These results do not lead to a definite conclusion regarding the cause of the disease. In the three cases in which Pfeiffer bacilli were present in large numbers, a new feature was added to the appearances of the bronci and lungs, namely, the large amount of purulent exudate in the bronchi and bronchioles. Since all the bacteria found in these cases—including the Pfeiffer bacillus—are present in normal throats in a fairly large number of cases, stronger evidence is needed before ascribing to any of them the causation of influenza.

COMMENT

These results suggest that influenza is a disease caused by some as yet undiscovered agent, which produces inflammation of the entire respiratory tract, and effects a very profound lowering of resistance, which is perhaps expressed by the constant and striking leukopenia. Lack of reaction is the most noticeable clinical feature. Under these circumstances, invasion follows by the various bacteria that are capable of becoming pathogenic, although harmless in the normal mouth.

The prominence that the Pfeiffer bacillus has enjoyed with regard to influenza makes it timely to discuss the status of this bacillus. In 1889 many investigators studied influenza. Clinical descriptions were accurate and complete; but it is difficult to find a clear description of the lungs, and bacteriologic methods were insufficient to detect the organism later described by Pfeiffer as the cause of the disease. But the features emphasized by Pfeiffer, namely, purulent bronchitis and bronchopneumonia, were not mentioned by the early writers as characteristic of the disease. Strumpell[2] refers to two forms of lesion in the lungs: a diffuse lobular catarrhal pneumonia almost always in the lower lobes; and diffuse purulent bronchopneumonia. The first type of lesion was present in the majority of cases. During the epidemic, various bacteria were found. Ribbert[4] found hemolytic streptococci most often; Marmorek[5] encountered pneumococci; in more searching studies, Weichselbaum[6] found pneumococci to be the most frequent invaders. Similar results were obtained by Kirchner[7] and Babes,[8] while Levi[9] found pneumococci with streptococci and staphylococci. The inference drawn by all these investigators was that influenza merely prepared the way for the secondary invasion by the bacteria that they described. Two years after the epidemic, Pfeiffer[10] studied a number of cases of purulent bronchitis and purulent bronchopneumonia that were called "influenza." In the bronchial secretion from these cases, he was able to observe and cultivate minute gram-negative bacilli that he had seen in the sputums from cases during the previous epidemic of influenza. Since he showed that they could not be cultivated by the methods used by the earlier workers, it was held as probable that these bacilli were the agents in the epidemic of 1889. He found that the bacilli would not grow on any medium without the addition of blood. His descriptions of the sputum and of the lungs are very definite. He characterized the sputum as being yellow-green, thick and sticky, and frequently very copious. In the lungs he found bronchopneumonic nodules, in the center of which the cut bronchiole yielded pus, identical with the material in the sputum, and composed of pus cells embedded in mucus in which great numbers of the bacilli could be found. He argued that these bacilli occurred only in the disease he was studying, and therefore he named it the influenza bacillus. Since then, all conditions in which the Pfeiffer bacillus has been found have been called "influenzal." Weichselbaum[11] studied five such cases of purulent bronchopneumonia and found the Pfeiffer bacillus in all cases. Grassberger[12] obtained similar results.

French investigators did not accept the results of Pfeiffer. They argued that since this bacillus was found in conditions other than influenza, it could not be the cause of this disease. This view is well presented by Rosenthal.[13] Indeed, many investigators began finding the Pfeiffer bacillus in a variety of diseases, obviously not associated with the epidemic. Wynekoop[14] described three cases of conjunctivitis that gave pure cultures of Pfeiffer bacilli. Süsswein[15] recovered this organism in ten out of twenty-one cases of measles. Leiner[16] studied eleven cases of diphtheria complicated by purulent bronchitis, and all gave cultures of the same bacillus. Auerbach[17] found the Pfeiffer bacillus

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4. Ribbert, G.: Deutsch. med. Wchnschr. **16:** 61, 1890.
5. Marmorek, A.: Wien. klin. Wchnschr. **3:** 143, 1890.
6. Weichselbaum, A.: Wien. klin. Wchnschr. **3:** 104, 1890.
7. Kirchner, M.: Ztschr. f. Hyg. **9:** 528, 1890.
8. Babes, V.: Zentralbl. f. Bakteriol. u. Parasitenk. **7:** 233, 1890.
9. Levi: Berl. klin. Wchnschr. **27:** 143, 1890.
10. Pfeiffer, R.: Deutsch. med. Wchnschr. **27:** 28, 1892; ibid. **27:** 465, 1892; Ztschr. f. Hyg. **13:** 357, 1893.
11. Weichselbaum, A.: Wien. klin. Wchnschr., **32:** 459, 1892.
12. Grassberger: Ztschr. f. Hyg. **25:** 453, 1897.
13. Rosenthal: Arch. d. med. **1:** 1281, 1905.
14. Wynekoop, F. E.: A Further Study of the Influenza Bacillus, J. A. M. A. **40:** 574 (Feb. 28) 1903.
15. Süsswein: Wien. klin. Wchnschr. **14:** 1149, 1901.
16. Leiner: Wien. klin. Wchnschr. **14:** 1001, 1901.
17. Auerbach: Ztschr. f. Hyg. **47:** 259, 1904.

a common inhabitant of the tonsils and tracheal secretion in cases of diphtheria, scarlatina, measles and sore throat. Wollstein[18] studied a large number of cases of respiratory infections in infants, and found the Pfeiffer bacillus in sixteen out of fifty-three cases of bronchopneumonia; in eleven of forty-five cases of bronchitis; in eight of twenty-six cases of measles; in eight of twenty-four cases of tuberculosis, and in three of seven cases of empyema. The method used was to plant coughed-up mucus on blood agar plates. Davis[19] found Pfeiffer bacilli in sixty-one of sixty-eight cases of pertussis, and with great frequency in measles, chickenpox and bronchitis, as well as in two of twenty normal throats. In a very exhaustive clinical and bacteriologic study of 186 cases of respiratory infection, occurring between 1902 and 1904, Lord[20] found Pfeiffer bacilli in overwhelming numbers in 25 per cent. by cultural methods. In Camp McClellan last winter there occurred two cases of bronchopneumonia, presenting at necropsy appearances identical with those described by Pfeiffer, in which Pfeiffer bacilli were recovered from the lungs in almost pure culture; and at Fort Sam Houston in February and March, 1918, during the epidemic of streptococcus pneumonia following measles, these bacilli were present with considerable frequency, though they were disregarded as an etiologic factor in the pneumonia under study.

The foregoing indicates that the Pfeiffer bacillus is at certain times, at least, definitely pathogenic. It is associated, most typically, with purulent inflammation of the bronchi and bronchioles. Its appearance in such a variety of conditions primarily caused by other agents robs it of that individuality which it should possess to be the producer of such unique epidemics. If it can be shown in the future that this bacillus occurs with frequency in normal throats, then it can no longer be suspected of even being related to the cause of influenza. In this regard, the report of the pneumonia commission[21] at Camp Pike, written long before influenza appeared in this country, is of value. Sputums from 132 normal individuals were studied by injecting the sputums into white mice. Pfeiffer bacilli were recovered in about 35 per cent. of the cases.

On the other hand, if these bacilli are merely secondary invaders, the frequency with which they occur in the cases of influenza reported by others suggests that these bacteria are very common in normal throats. But the evidence at hand seems insufficient to warrant the statement that the Pfeiffer bacillus is the cause of influenza.

Two points must be settled: First, the question of identifying and classifying these bacilli must be investigated; and second, the exact frequency of their occurrence in normal throats must be ascertained.

CONCLUSIONS

1. Epidemic influenza is a disease of unknown origin.
2. Various bacteria, commonly found in normal throats, are encountered in the cultures from influenza patients.
3. The experience of many investigators indicates that the Pfeiffer bacillus may be pathogenic and cause a form of purulent bronchitis and bronchopneumonia.
4. The Pfeiffer bacillus occurs with striking frequency in the throats of patients with measles, pertussis, diphtheria and scarlatina, especially when these conditions are complicated by the form of bronchitis or bronchopneumonia mentioned.
5. The Pfeiffer bacillus occurs with frequency in normal throats, in times when no epidemic of influenza exists.

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[18] Wollstein, M.: J. Exper. Med. **7**: 681, 1906.

[19] Davis, D. J.: Bacteriology of the Respiratory Tract, J. A. M. A. **48**: 1563 (May 11) 1907.

[20] Lord, F. T.: Boston M. and S. J. **152**: 537, 1905.

[21] Report of Pneumonia Commission, Camp Pike, to the Surgeon-General of the Army, 1918.

PATHOLOGY OF THE PNEUMONIA FOLLOWING INFLUENZA

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Contributions to the study of the pneumonia following influenza in the recent epidemic are still desirable because of the difference of opinion as to its nature and causes that has been evidenced by numerous published papers. All have agreed as to the uniform character of the disease influenza wherever it has appeared in its swing across the continent, but conflicting views have been presented as to its etiology and as to the relation of various bacteria discovered in the respiratory tract, especially in cases of pneumonia, to the original disease and to the pneumonia. The dispute is concerned more particularly with the part played by the *Bacillus influenzae* of Pfeiffer, which some authors have found so regularly present as to lead them to consider it the cause not only of the pneumonia but also of the original epidemic disease influenza. Indeed, it was launched by Pfeiffer as the cause of influenza. Investigators in other localities have failed to find this organism, and this has been explained by those more successful as being the result of technical incompetence.

The present study was made by a commission consisting of Major R. A. Kinsella and myself, sent by the Surgeon-General of the United States Army, first to Camp Lee in Virginia and later to Camp Dix in New Jersey. Twenty necropsies were performed at Camp Lee when the epidemic was nearing its height, and twelve at Camp Dix at a time when the influenza was practically over but many cases of pneumonia were still in the hospital. Between these visits and afterward, seventeen necropsies were performed at the Johns Hopkins Hospital on patients who died there in the early part of the epidemic of influenza.

It has been stated that the influenza bacillus may be present in the upper respiratory tract, larynx and bronchi when it is not to be obtained from the substance of the lung. On this account, cultures and smears are made from bronchial pus, from the mucosa of the trachea, larynx, etc. This precaution was not observed in the Camp Lee cases, although cultures were made from the accessory nasal sinuses whenever possible; but it was carried out at Camp Dix and later at the Johns Hopkins Hospital. It was suggested that this might account for our inability to find the influenza bacillus in all the cases at Camp Lee; but the later study of these cases has proved this to be unfounded. A combination of Goodpasture's and Weigert's stain[1] permits a very satisfactory survey of gram-negative and gram-positive bacteria in the tissues. The organisms are brilliantly stained, the gram-negative red, the gram-positive blue, black or purple, so that it is easy to recognize the presence of influenza bacilli even when a few are mixed with great numbers of gram-positive bacteria. This stain showed that influenza bacilli, when they occurred in the bronchi at all, penetrate into the smaller bronchioles and could hardly be missed in a culture taken from the lung unless the medium employed for the culture was unsuited to their growth. The morphology of the influenza bacillus when clearly seen in the tissues or in smears is very characteristic, and their discovery in this way was nearly always confirmed by reference to the records of the cultures. Indeed, the morphologic recognition of the predominant organisms in the tissues seemed surprisingly accurate when compared later with the results of the cultures.

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[1] MacCallum, W. G.: A Stain for Influenza Bacilli in Tissues, J. A. M. A. **72**: 193 (Jan. 18) 1919.

The accompanying table gives the predominant organism in each case, as decided by consideration of smears, cultures and sections usually with the aid of mouse inoculations. The influenza bacillus is recorded in the table whenever found even in small numbers or in the trachea or nasal sinuses alone. When it was the predominant organism it is put first.

RESULTS OF BACTERIOLOGIC EXAMINATIONS*

Camp Lee		Johns Hopkins Hospital		Camp Dix	
Case No.	Bacteria Found	Case No.	Bacteria Found	Case No.	Bacteria Found
211	St, B I	5706	S H	80	B I, St
212	Pn I	5712	Pn IV	81	B I
213	Gas bacillus	5713	Pn IV, St	82	Pn, B I
214	B I, Pn	5714	Pn IV, St	83	Pn, B I
215	Pn, B I?	5720	S H	84	Pn IV, B I
216	Pn IV, B I	5724	St, Pn	85	Pn IV, B I?
217	Pn	5725	Pn	86	B I
218	Pn IV, B I?	5726	Pn	87	Pn IV, B I?
219	S H	5728	Pn IV	88	Pn III, B I
220	Pn IV	5733	Pn, St	89	B I, S H
221	Pn IV	5736	Pn, St	90	B I, Tb, Pn
222	Pn IV			91	B I, Pn
223	Pn IV	5753	Pn		
224	Pn IV	5763	Pn IV		
225	Pn IV	5765	Pn		
226	Pn, S H, St	5766	Mixture		
227	Pn IV	5769	Pn, mixture		
228	Pn IV				
229	Pn IV				
230	Pn IV, B I?				

* St indicates staphylococcus; B I, Bacillus influenzae; Pn I, pneumococcus Type I; S H, Streptococcus hemolyticus; Tb, tubercle bacillus; Mixture, masses of bacteria of all kinds.

Some doubt may be admitted as to the nature of these bacilli in certain cases, and Colonel Nichols has pointed out the occurrence of members of the Friedländer group. In Cases 85 and 87 it was thought that the bacilli resembled the Friedländer bacillus in culture.

From the table it is seen that at Camp Lee most of the cases showed Pneumococcus Type IV without any influenza bacilli. This conclusion is not reached from the mere failure of cultures but from the examination of smears from the lung and stained sections from lung, bronchi and trachea, often including also the larynx and nasal sinuses. No considerable number of influenza bacilli could be overlooked, and it has been observed repeatedly that they are not made to disappear by even an overwhelming growth of other bacteria. They were definitely found in three cases, and there were in three other cases a few gram-negative bacilli which might be thought to be influenza bacilli. At the Johns Hopkins Hospital similar methods revealed no influenza bacilli whatever. At Camp Dix, on the contrary, influenza bacilli were found in every case.

From these results it seems necessary to draw one of two conclusions: In certain regions or in certain communities the influenza bacillus may be so prevalent as a relatively harmless inhabitant of the throat that when some epidemic disease, such as influenza, lowers the resistance of many persons, it becomes the natural secondary invader capable of producing pneumonia. This might be regarded as the endemic occurrence of a potential cause of pneumonia.

On the other hand, it has been shown that a single carrier of the hemolytic streptococcus, when introduced into a hospital ward full of patients with measles, may be the source of an epidemic of streptococcus pneumonia. It seems quite probable that secondary infection with the influenza bacillus with the production of pneumonia may in the same way have a local epidemic character.

No satisfactory evidence has been brought forward to show that the epidemic disease influenza is a bacterial infection. It is evidently a general or systemic infection not especially affecting the respiratory tract and analogous in many respects, as Bloomfield has pointed out, to the well known acute exanthematic diseases. It produces an extreme depression of the general resistance of the individual to the invasion of bacteria, as is shown in one respect by the characteristic leukopenia, which may persist in spite of the development of pneumonia. Under these circumstances, bacteria that are present in the throat or are introduced from without readily invade the tissues of the whole respiratory tract and give rise to pneumonia. Because of the lack of resistance, they multiply until they are present in such enormous numbers as are never seen under ordinary conditions. This must be regarded as a secondary infection. The secondary infection apparently determines the anatomic type of the pneumonia, but there may be other successive infections with different organisms, so that it often becomes difficult to say which is the secondary and which the tertiary or quaternary infection. It seems possible that one or more of these organisms may be present without producing any recognizable lesion, while a later invader causes pneumonia, or that when one organism has produced its characteristic pneumonia, others may grow beside it without altering the lesion. On the other hand, a final invader may completely mask the original pneumonia by producing a widespread necrosis.

The influence of the predisposing disease, influenza, is such as to permit the extremely rapid growth of the organisms and minimize the reaction of the tissues. Any attempt to recognize the nature of the infecting organisms on the basis of our knowledge of the specific anatomic effects that they produce in ordinary times must be made with this in view.

It is perhaps questionable whether we have as yet enough carefully studied cases of pneumonia produced by unmixed infections with each of the bacteria concerned, on the basis of predisposing influenza, to allow us to decide as to the precise anatomic effect that is characteristic of each. Thus it is probably impossible to distinguish a Type I pneumococcus pneumonia from one produced by pneumococcus Type II. It is difficult to say whether *Staphylococcus aureus* produces, under these circumstances, a pneumonia that is distinct from these, although many cases have been studied and it is possible that some criterion will be found that will aid in making this distinction. Those produced by the hemolytic streptococcus are probably recognizable as such, and it appears that when alone or as the predominant organism the influenza bacillus of Pfeiffer produces an interstitial bronchopneumonia that is definitely and easily distinguished from all the others. The difficulty in making these distinctions may be due in part to the fact that mixed infections are the rule.

At the Johns Hopkins Hospital and at Camp Lee we observed patients in an early stage of the epidemic, evidently those of great susceptibility, who succumbed quickly to pneumonia. At Camp Dix the epidemic that had raged with high mortality was practically over, and deaths were occurring among those who had survived somewhat longer and were beginning to present evidences of late extensions of the secondary infection in the form of pleurisy with effusion, endocarditis, scattered infarcts, etc. It seems that the performance of a series of necropsies in one place throughout the whole course of an epidemic might result in this way in revealing all the successive stages of the disease.

TYPES OF PNEUMONIA

In persons who have just passed through an attack of influenza, the following types of pneumonia may be recognized, although it is evident that the distinctions may be rendered indefinite by simultaneous infection with other organisms: Pneumonia caused by (1) the pneumococcus; (2) the staphylococcus; (3) the streptococcus, and (4) *B. influenzae* of Pfeiffer.

1. *Pneumococcal Pneumonia.*—When the pneumococcus occurs in pure culture, and also in those cases in which it is the predominant organism even in the presence of influenza bacilli and other organisms, a characteristic form of pneumonia is produced under the conditions of lowered resistance. In most instances there is very little fluid in the pleural cavity, and the surface, instead of being covered with a shaggy exudate of fibrin, is only slightly dulled. There are brick-red, paintlike patches here and there, and sometimes small, elevated, grayish yellow flecks which become confluent in patches. The pleura and interlobular septums and remaining framework of the lung appear to be unchanged. The bronchi are not especially conspicuous. Their walls are not thickened, and while they may sometimes contain in the later stages fibrinous molds, they are usually empty or partly filled with a thin, brownish or blood-stained, frothy fluid. Their mucosa shows no marked alteration from normal. The blood vessels are normal.

On external inspection of the lung, it is frequently possible to recognize sharply outlined consolidated lobules alternating with air-containing and atelectatic lobules. The lobular character of the consolidation is in these cases well marked, although it tends to lose its definiteness through the confluence of adjacent areas. No general statement can be made as to the location of the consolidation, but it usually affects the posterior and lower part of each lobe, and the posterior part of the lower lobe is especially frequently involved.

The cut surface of the lung shows in the more acute cases a peculiar lobular or confluent consolidation which corresponds well with what is commonly written of the stage of engorgement in the description of lobar pneumonia. Bronchioles, blood vessels and the framework of the lung are not appreciably altered. The substance of the lung is firm, elastic, and not rigid as in later stages; but it pits on pressure, exuding a great quantity of blood or brownish blood-stained fluid. The surface is smooth, moist, slightly elevated above the surrounding tissue, grayish red or brownish red, and coarsely spongy. Distinct but minute depressions can be seen everywhere, filled with a translucent, gelatinous, red fluid. These are too large to be the cavities of alveoli, and are separated by what appear to be thick walls of homogeneous tissue. They are in fact the widened ductuli alveolares filled with fluid and separated by areas of alveoli filled with a somewhat firmer exudate. No visible or palpable plugs of exudate project from any part of the surface, and there is nothing of the roughness that this produces in later stages. Nevertheless, the consolidated tissue is easily distinguished from that surrounding it, because it has lost the satiny texture of the normal lung, which may be pulled this way and that, like silk gauze. In the area of pneumonia, despite its smoothness and moist, rather translucent surface, the distended form of the meshes is maintained.

Microscopically these areas show an extraordinary dilatation of the ductuli alveolares, which are filled with clear fluid containing only a few leukocytes and a delicate coagulum. They are lined with a curious hyaline substance which begins in a layer overlying the cylindric epithelium in the terminal part of the bronchiole and often runs over the orifices of the atriums or enters them and extends toward the air sacs. It does not give the reactions of fibrin. The alveoli contain an exudate of fluid with a few leukocytes and mononuclear cells, often overshadowed by great numbers of well preserved red corpuscles. These cells are held together by the most delicate, filmy network of fibrin. Great numbers of pneumococci are scattered throughout the exudate. The alveolar walls maintain their normal appearance.

Later stages in the pneumonia show within these areas patches of rough, gray, consolidated tissue, from which definite plugs of exudate project. Every transitional stage may be found, up to the most advanced lobar consolidation, with dense gray hepatization.

2. *Staphylococcal Pneumonia.*—We encountered no cases in which the staphylococcus was present alone and, indeed, none in which it occurred in very great numbers. No definite statement may be ventured as yet, therefore, regarding the type of pneumonia produced. In one case in which the staphylococcus appeared to be the predominant organism, the lesion was indistinguishable from that just described for the pneumococcus.

3. *Streptococcal Pneumonia.*—When *Streptococcus hemolyticus* occurs alone in these cases, as in Cases 219 and 5720, the lesion produced is practically identical with that described as "lobular pneumonia" in certain cases of the previous epidemic. There is not necessarily extensive pleural effusion, but the pleura may contain a small amount of blood-stained fluid. The interlobular septums are edematous, and the bronchial walls are slightly thickened. The area of consolidation is indefinitely outlined, and in places it is deep red or almost black, evidently as the result of laking of blood.

Microscopically the bronchi and alveoli are packed with leukocytes, blood and fibrin, and loaded with tangled masses of streptococci. Much of the blood is laked and appears in the form of shadows. Much of it, again, is coalescent into a beaded network of pink-staining, hyaline material. The capillaries in the alveolar walls are plugged in many places with hyaline fibrinous thrombi, and a similar hyaline material is found in the walls of the larger blood vessels. The bronchial walls are infiltrated with leukocytes, and the epithelium is lifted up or destroyed. Whole areas of the lung, although retaining their form, are entirely necrotic, the alveolar cavities being packed with almost solid masses of streptococci. Lymphatics are everywhere distended with exudate containing enormous numbers of streptococci. In none of these cases was there enough resistance to give time for the development of an interstitial bronchopneumonia.

4. *Pneumonia Produced by Bacillus Influenzae of Pfeiffer.*—In two cases at Camp Dix the influenza bacillus was present in pure culture, and in others it was the predominant organism. Tissues from another case in which the influenza bacillus occurred alone were sent me from Camp Jackson. It is easy to recognize the type of pneumonia produced by this organism, since it is fundamentally different from the others.

There is no abundant pleural exudate, although the pleural surface may be covered with fibrin or with old adhesions. The bronchi exude a thick, yellow pus, and the bronchial glands are moderately enlarged.

On section, the lung is found to be in large part air-containing, but it is studded throughout with palpable shotlike nodules or with somewhat larger patches of firm consistency. The cut surface of these nodules is smooth, and they are grayish yellow. They are seen to be peribronchial, so that when they stand alone the center is occupied by the lumen of a bronchiole. The remaining lung substance is air-containing or indurated and grayish.

Microscopically it is found that the bronchi are filled with an exudate of leukocytes, among which numerous influenza bacilli are lying, sometimes in clumps and scattered freely, but most often enclosed in phagocytic cells. The wall of the bronchus is greatly thickened by infiltration of mononuclear cells with a few leukocytes, and by the new formation of connective tissue cells. The alveolar walls for a considerable distance about this are similarly thickened, infiltrated and indurated. The alveoli contain an exudate which is usually rich in leukocytes, but which is often predominantly composed of desquamated epithelial cells and dense fibrin. In this exudate it is rarely possible to find influenza bacilli. Organization is advancing rapidly, and in many instances it has completely replaced the fibrinous exudate with fibrous tissue over which epithelial cells have grown.

The lymphatic channels in the bronchial walls and the widened interlobular septums are inconspicuous, and none are found distended with exudate. There is no intense infection of the pleura or great outpouring of exudate. These two facts, together with the relatively inconspicuous part played by the polymorphonuclear leukocytes in the alveolar exudate, and in the exudate infiltrating the walls of the bronchi and alveoli, are all that distinguish this pulmonary change from the interstitial bronchopneumonia caused by the hemolytic streptococcus, as described in previous papers. The sharp contrast between this form and those produced by the pneumococcus and streptococcus is very evident.

In describing the forms of pneumonia caused by the hemolytic streptococcus, it was shown that interstitial bronchopneumonia was produced when the organisms encountered a high resistance, through which the tissues succeeded in barricading themselves against invasion and repressing the multiplication of the bacteria, but that with a lapse in the powers of resistance there might be produced in the same case areas of lobular pneumonia in which an exudate of leukocytes filled the alveoli. In this exudate the streptococci multiplied with great rapidity.

In the case of the influenza bacillus an exactly analogous condition exists. There are cases in which an interstitial bronchopneumonia has developed, with restriction of the bacilli to the bronchial exudate, but in which later, probably with lowering of resistance, other lesions presenting the character of lobular pneumonia have arisen in which the more distant alveoli are packed with leukocytes with abundant influenza bacilli.

In the doubt that for a time assailed me as to whether the interstitial form of bronchopneumonia seen in Texas might after all be due to the influenza bacillus rather than to the predominant streptococcus, I have been much reassured by this finding. Although influenza bacilli were found as accompanying organisms in a few of those cases, there were many in which the typical lesions were produced by the streptococci alone. But now that it appears that streptococci and influenza bacilli may in precisely similar ways be governed, as regards the character of the lesions they produce, by the resistance opposed to them, it seems unnecessary to ascribe one type of lesion to the streptococcus and another to the influenza bacillus.

Various complications that occurred in these cases of pneumonia will be discussed in detail in another paper. They include such things as hyaline degeneration of the rectus abdominis muscles, ulcerative laryngitis and tracheitis, and generalized emphysema.

CONCLUSIONS

1. The epidemic disease influenza resembles in many respects measles and other acute exanthematic diseases. Nothing is definitely known as to its causative agent.

2. It produces great lowering of resistance to bacterial invasion and is therefore often followed by pneumonia caused by the different types of pneumococcus, *Staphylococcus aureus, Streptococcus hemolyticus* or the influenza bacillus of Pfeiffer.

3. In some regions the influenza bacillus is a particularly common secondary invader. In other regions it is insignificant, its place being taken by one of the pneumococci. This may depend on an endemic or epidemic distribution of these organisms as inhabitants of the nasopharynx.

4. The form of pneumonia produced after influenza is greatly modified by the lowering of resistance, which allows huge numbers of bacteria to grow. Nevertheless the types caused by the pneumococcus, streptococcus, and influenza bacillus are to be sharply distinguished. Probably the type caused by the staphylococcus will be shown to have distinctive peculiarities when adequate material has been studied.

Exemia in Shock.—In shocked men there is a concentration of the blood in the capillaries, indicated by a marked difference between the capillary and the venous blood counts. This difference may amount to as much as 2,500,000 corpuscles per cubic millimeter in favor of the capillary count. The evidence from blood counting indicates that the "lost blood" of shock (the exemia) is to a considerable degree to be found in the capillary bed.—*Review of War Surgery and Medicine.*

THE MIGRATORY APPENDIX

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There are certain types of tumors in the abdomen, usually cystic in character, that become attached by adhesions at a point distant from their origin and finally become detached entirely from their original locality, their nutrition being maintained through blood vessels in the new adhesions. These tumors are known as migratory tumors. The peculiarity of these growths suggested to my mind the caption of this article. It is not difficult to understand that the appendix might be subjected to a similar condition, and, being separated from the cecum, might maintain an entirely separate life through new blood vessels formed in abundant adhesions. A condition of this kind is well illustrated by the following case:

REPORT OF CASE

Miss F. M., aged 23, had suffered from a gonorrheal infection for which I had treated her for nine months. In August, 1917, she had recovered sufficiently so that treatments were discontinued. She reappeared in August, 1918, complaining of pain in the right iliac region. This pain became so acute that she was confined to bed. There was some nausea, elevation of temperature and increase of pulse rate. The patient complained of tenderness in the right iliac region on pressure. There was much difficulty in getting a bowel movement. On account of the previous history of tubal disease it was a question whether the trouble was pyosalpinx or appendicitis. I decided to make an exploratory examination, which I did.

I operated on her, Sept. 10, 1918, at Rockford City Hospital. The incision was made through the right rectus muscle, so that it might be enlarged in either direction to make free access to the appendix or tube as might be necessary. On opening the abdomen I found a considerable mass of omentum adherent in the right iliac fossa. This I ligated *en masse* and removed it entirely. The intestines in this region were kinked and firmly adherent to each other, thus accounting for the partial intestinal obstruction. The intestines were covered with a yellow plastic exudate. Sterilized gauze was used in separating the adhesions. The search was made at the cecum for the appendix, but I was unable to locate it. The right fallopian tube was distorted and adherent. Pressure on the tube forced a few drops of pus out of the fimbriated extremely. The tube was ligated and removed. At this stage of the operation the distal end of the appendix was observed protruding about half an inch through a mass of adhesion in the right iliac fossa. The appendix was dissected out from these adhesions as thoroughly as possible. The toilet of the peritoneum was finished by pouring about 4 ounces of ether into the pelvis and right iliac fossa, so that any infection of this locality through the tube might be counteracted and the peritoneum closed in layers.

No doubt a continual leakage of pus from the right tube produced the intestinal adhesions, and the appendix, which had become entirely separated from the cecum, was kept alive through new blood vessels formed in the many adhesions about this organ.

The patient made a good recovery without complications, save a slight infection in one of the skin stitches.

COMMENT

It is difficult to tell whether the appendix or the tube was primarily the offending organ in this case. It is interesting to speculate as to what pathologic condition would have followed if such an appendix had been left entirely to nature. It is my own opinion that the appendix and the adhesions would ultimately have been absorbed without causing any trouble, but it is plainly to be seen that a tube with a patulous extremity periodically leaking pus into the peritoneum might have caused serious complications. This condition of the appendix may account for some of the cases reported in which no appendix was found.

BRONCHOPNEUMONIA DUE TO HEMOLYTIC STREPTOCOCCI FOLLOWING INFLUENZA *

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The bacteriology and pathology of bronchopneumonia during the last two months (December and January) have become quite different, at the Chelsea Naval Hospital, from that found during the preceding three months, including the most severe period of the first local outbreak of influenza. In the earlier period, cultures of Pfeiffer's bacillus were obtained from the lungs in 86 per cent. of cases postmortem, the organism often being found in pure culture, pneumococci in 50 per cent., and hemolytic streptococci in 13 per cent.; while during the last two months, cultures of hemolytic streptococci have been obtained from the lungs in 100 per cent. of those examined at necropsy, and in the majority of instances pure cultures were obtained. Pfeiffer's bacillus was demonstrated in only two cases of a total of sixteen, and these two were examined the first week of December.

This marked variation in the type of invading organism in bronchopneumonia is of particular interest since it represents the experience of a single station during a relatively short period of time; and we are now familiar with wide differences in bacteriologic observations from various sections of the country since the epidemic of influenza began.

From the twenty-six cases studied during the height of the epidemic in the early fall, we became more or less familiar with a type of pneumonia which was fairly typical of that series, and were able to recognize many modifications obviously due to secondary invasion by pathogenic organisms. An acute bronchiolitis characterized by the presence within the bronchioles of a dry exudate consisting of a few leukocytes, polymorphonuclear and mononuclear, mucus and fibrin, usually with partial or complete necrosis of the mucous membrane, and the presence of a characteristic irregular hyaline membrane on the infundibular and alveolar walls, were regarded as typical early lesions. Bronchopneumonia following this was fulminating in type and consisted in a widespread toxic injury to alveolar tissues, so that they became filled with fluid exudate, fibrin, and hemorrhage with extensive injury to alveolar walls and capillaries. From a study of these cases we stated that "the pulmonary injury and reaction being so acute and often widespread, and the fact that in certain very early cases bacteria of any kind are so scarce or not found at all, make us feel, notwithstanding the demonstration of influenza bacilli in pure culture in the lungs in all but one instance, that at this stage organisms are as yet comparatively few within alveoli, and their primary injury is due to a very potent toxic substance elaborated in and disseminated through larger air passages." Following this initial injury, pathogenic bacteria readily invaded the pulmonary tissue, producing injury and reaction more or less typical for the organism concerned. In striking contrast to the group of cases that constitutes the material for the present report, hemolytic streptococci at that time played a relatively small rôle as a secondary invader, complicating only five, or 13 per cent., of the cases. In three of these, multiple abscesses were present in the lungs, and in the other two streptococci and influenza bacilli were associated in the production of widespread bronchiectatic abscesses and ulcerative bronchitis.

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* From the U. S. Naval Hospital.

The present report is based on the postmortem examination of sixteen cases, constituting all the cases of bronchopneumonia examined at necropsy during the past two months. Eleven of the patients developed empyema, and the pleural exudate yielded pure cultures of hemolytic streptococci.

CASES OF BRONCHOPNEUMONIA WITH PATHOLOGIC DIAGNOSIS

Case No.	Range of Leukocyte Counts	Pathologic Diagnosis	Bacteriology of Lungs	Clinical Diagnosis on Admission
1	6,600-12,800	Bronchopneumonia; no empyema	Influenza bacilli; hemolytic streptococci; pneumococcus Type IV	Influenza
2	15,000-13,000	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci; nonhemolytic streptococci; influenza bacilli	Influenza; bronchopneumonia
3	3,200	Bronchopneumonia; no empyema	Hemolytic streptococci	Influenza
4	13,000-48,000	Empyema (bilateral); pericarditis; slight pneumonia	Hemolytic streptococci	Bronchopneumonia
5	25,000	Bronchopneumonia; peritonitis; empyema	Hemolytic streptococci	Bronchopneumonia
6	12,000	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Bronchopneumonia; empyema
7	4,700-3,400	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Influenza
8	6,000	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Influenza; bronchopneumonia
9	4,000-15,000	Bronchopneumonia; empyema (bilateral); peritonitis	Hemolytic streptococci	Influenza
10	8,000-10,200	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Empyema; bronchopneumonia
11	7,000	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Influenza
12	16,800	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Empyema; bronchopneumonia
13	5,000-8,200	Bronchopneumonia; no empyema	Hemolytic streptococci	Influenza
14	9,000-19,200	Bronchopneumonia	Hemolytic streptococci	Influenza
15	3,000-6,000	Bronchopneumonia	Hemolytic streptococci	Influenza
16	5,000	Bronchopneumonia	Hemolytic streptococci	Influenza

The accompanying table presents these cases. Although some of the patients entered the hospital with well-developed bronchopneumonia, in several instances the clinical diagnosis of influenza or post-influenzal pneumonia was made.

In five cases the empyema was bilateral, in four on the left, and once on the right side. In each instance bronchopneumonia was bilateral. One case showed an extensive streptococcal pneumonia in each lung with no pleural exudate, and is of interest because numerous fibrous adhesions were present over the lungs, suggesting the possibility of an increased resistance to the infection because of previous inflammation.

The lungs were moist and congested, often atelectatic where pleural exudate was voluminous. The areas of consolidation were grayish purple, and cut surfaces exuded a fairly thick, purplish pus. In the early stages of pleural inflammation the exudate is serous, containing relatively few cells and organisms; later it becomes thick pus containing enormous numbers of streptococci. In four cases the infection was very prominent in the lymphatics and interlobular tissue of the lungs. The lobules in areas of considerable size were found outlined by wide (from 3 to 4 mm.) yellow bands. These bands followed the veins and bronchi to the hilum. The lymphatics of the pleura may also be filled with streptococci. Abscesses have occasionally been found. Microscopically the alveoli are filled with polymorphonuclear leukocytes and usually enormous numbers of streptococci, with little or no fibrin. Often there is widespread necrosis. In no instance have we observed the appearances of interstitial bronchopneumonia, described by MacCallum, which occurs so frequently as a sequel to measles. The distribution of the pneumonia is usually lobular and rather massive. In cases of short duration it may be lobar in distribution and involve the greater part of the lung tissue. Nor have we recognized the toxic lesions of early influenzal pneumonia as seen during the first weeks of the epidemic, and I regard all the cases in this report as instances of primary streptococcus pneumonia frequently following an attack of influenza.

The question naturally arises whether some of these cases were not primarily streptococcus infections without influenza. Eleven of the sixteen had attacks typical of influenza which terminated in pneumonia; the diagnoses of the other five were questionable as to an attack of influenza. In view of the experiences last year at various stations of epidemic streptococcal infections of the respiratory tract, it does not seem unlikely that similar outbreaks will occur or are occurring this winter, and with the impressions of influenza so recently in mind there will probably be considerable confusion of the two diseases, especially as there do not appear to be any very certain criteria which distinguish them, particularly when bronchopneumonia is present. Symptoms of onset, leukocyte count and the fever chart may be quite similar, although apparently there is usually more complaint of sore throat with streptococcal infections.

At this hospital, during the period covered by the present report, hemolytic streptococci have been exceedingly prevalent in various forms of inflammation, and this unusual prevalence explains in part their high incidence as a cause of bronchopneumonia attacking persons whose resistance is lowered by influenza.

The absence of the pathologic evidences of a preceding or accompanying toxic inflammation of the lungs, which in the early part of the epidemic of influenza appeared fairly characteristic of the pulmonary lesions of this disease per se, makes me regard the cases of the present series as examples of primary streptococcal pneumonia.

Bronchopneumonia following influenza has at present absolutely no etiologic or pathologic definition, for the type of organism concerned and the type of lesion in the lungs are decidedly variable at different times even at the same station. It is essential to bear this fact in mind in any consideration of the pneumonic complications of influenza, especially from the standpoint of prospective treatment.

APPENDICITIS AT CAMP LOGAN AS A SEQUEL TO INFLUENZA AND PNEUMONIA

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It is well known that the occurrence of several cases of acute appendicitis in rapid succession in a small community, typically in a boarding school or similar institution, is commonly in association with an epidemic affecting the respiratory tract. Most commonly we find streptococcic sore throat as the precedent disease, but not infrequently an epidemic of severe colds. Several such outbreaks have come under our observation. The studies of Rosenow are of special interest in this connection.

The increased number of cases of acute appendicitis requiring operation at Camp Logan since the recent respiratory epidemic has therefore attracted our attention. It is only fair to say at the start that the management of the medical service has been in the same hands since the opening of the hospital. The two chiefs of surgery, Major J. H. Blackburn and Major F. G. Dyas, have worked in closest cooperation with the chief of medicine, always under the general and close supervision of the commanding officer, Lieut.-Col. J. M. Willis, M. C. Thus absolute assurance may be given that the type of case recommended for operation has not varied during the entire period.

As showing the character of the epidemic, we may state that the admissions for influenza from Sept. 13 to Dec. 1, 1918, when it had ceased, numbered 4,126, and for pneumonia and bronchopneumonia 531 and thirty-six, respectively.

A careful estimate of the average number of men in camp from Sept. 15, 1917, the date of opening of the hospital, until Sept. 13, 1918, the date of the influenza outbreak, is 24,000, although the maximum number had reached 36,600. If we compute the average incidence of acute appendicitis requiring operation for the year, from Sept. 15, 1917, to Sept. 13, 1918, we find it to be 10.4 per thousand per year. The total number of cases in which operation was performed was 250, as given us by Lieut. F. H. Crail of the department of surgery.

During the period from Sept. 13, 1918, to Dec. 31, 1918, ninety-two patients were operated on, the average incidence per thousand per year being 30.66. The great reduction in the number of troops in camp meanwhile should be noted, the average being only 10,000 men. From September 13 to September 30 there were fifteen cases; in October, three cases; in November, thirty-nine cases, and in December, thirty-five cases. The falling off in October is wholly inexplicable, as the epidemic was at its height. The seventy-four cases for November and December would present a rate of 44.4 per thousand per year. No case demanded operation during the first seven days of January, 1919, and only two in the first twelve days. It is to be observed that the great number of operations came after the epidemic had passed the high point late in October, and the December quota, thirty-five cases, came after the epidemic had disappeared. We have collated the number of cases coming to operation with reference to previous attacks of appendicitis and to the occurrence of either influenza or pneumonia.

In the ninety-two cases, twenty-five patients had had previous well defined attacks of appendicitis; twenty had had influenza during the present epidemic, and four had had pneumonia. We might well consider the latter under the influenza heading, as presumably every patient with pneumonia in this epidemic had influenza first; five had had a "bad cold" during the epidemic—presumably mild influenza. Thus twenty-nine of the ninety-two patients had had influenza, pneumonia or a notably bad cold since Sept. 13, 1918. This number would not at all account for the great increase in the number of cases of operative appendicitis, and they constitute almost a trivial percentage of the total number affected by the epidemic.

An interesting feature of the respiratory epidemic was the great number of cases admitted to the hospital with the diagnosis of acute appendicitis in which, after a few hours' observation, we changed the diagnosis to either influenza or pneumonia, and in which the further course confirmed our opinion that no notable disease existed in the abdomen. In the influenza cases we assume that the symptoms leading to a diagnosis of appendicitis arose from the participation in the acute infectious process of the lymphoid tissues of the appendix, as is often noted in tonsillitis, measles and similar acute diseases.

In pneumonia the pain and rigidity were, at times, apparently of the same type, but were frequently due to the reflection into the abdomen of the pain of the diaphragmatic pleural involvement accompanying a pneumonia of the right lower lobe. It should be definitely understood that no such cases were even seriously considered for operation, although about fifty patients were received whose provisional diagnosis was wrongly given as appendicitis.

Of the ninety-two patients operated on the diagnosis of the pathologist was acute catarrhal appendicitis in fifty-four cases; acute suppurative appendicitis in fifteen and chronic catarrhal appendicitis with subacute exacerbation in twenty-three cases. The chief of surgery, Major F. G. Dyas, was the operator in twenty-nine of the cases; Lieut. F. H. Crail in fourteen; Capt. Arthur Love in twelve; Capt. E. R. Dumke in eleven, and others in a few scattered cases.

The findings that led us to recommend operation were identical with those on which we have depended in civil life in the absence of epidemic disease. There were generally noted abdominal pain, vomiting, moderate elevation of temperature and pulse rate, tenderness and rigidity in the lower right quadrant, and an increase in the white count, commonly with a relative polymorphonuclear increase. The blood findings were of more than usual value in view of the normal leukopenia of influenza. Due weight was, of course, given to the history of previous attacks.

Every case was examined with special care as to the presence of pneumonia or other acute respiratory disease, and the routine examination of urine was made. In no case in which we operated did we fail to find a pathologic justification for the operation according to the best judgment of the pathologist, the surgeon and the representative of the medical department. We have several times observed in former years, as many physicians have reported, a full fledged acute lobar pneumonia, generally in the right lower lobe, in cases in which we were told that the appendix removed the day before had been practically normal. We had no such occurrence in this series. It is necessary to mention this specifically, since the possibility of such error would almost certainly occur to many clinicians. No patient with acute respiratory symptoms was subjected to operation even though there might be present tenderness and rigidity in the abdomen, without several days of observation, and only three cases were sent to the operating room until after the subsidence of all such symptoms.

Our laboratory report is incomplete, since, during the epidemic, the typing of pneumococci and the hemolytic streptococcus work could not wait. Major M. C. Stone, M. C., chief of the laboratory service, reports that in the cultures from the nonsuppurative appendixes the hemolytic streptococcus was occasionally found, but most of the cultures were sterile. The suppurative cases showed the pneumococcus, the colon bacillus and the streptococcus, but without evidence of any predominating type of infection. We greatly regret that the exigencies of the epidemic prevented a full study of the relationship between the respiratory infection and that of the appendix.

There is certainly no ground in our findings for closely connecting the attacks of appendicitis, in any direct bacteriologic way, with the epidemic, as one may connect empyema with definite types of pneumonia.

A satisfactory recovery occurred in every case but one. The fatal result was noted in a patient who had been five weeks in the cardiac ward early in 1918 with widely dilated heart and systolic murmur at the apex. His compensation remained so poor that he had been excused from even the morning exercises, which, when taken, exhausted him for the day. The appendix was a long retrocecal one, largely subperitoneal and acutely inflamed, but not such as to lead us to have any special anxiety as to the outcome. Exhausting suppuration occurred, and he died at the end of the first week.

The data that we present are insufficient to justify any exact conclusions as to the influence of the epidemic on the morbidity from appendicitis. Nevertheless, we believe there is firm basis for the opinion that some close relationship exists between the two affections. It is extremely suggestive that on the first day of the influenza attack so many patients showed such definite signs in the region of the appendix as to lead to a diagnosis that proved to be incorrect, assuming our opinion on this point to have been well founded. If this symptomatology was dependent, as we believe, on involvement of the lymphoid tissues of the appendix, we may readily conceive that in many other instances a definite inflammation resulted which eventually demanded operation.

Perhaps we are not far wrong in assuming that the epidemic, characterized as it was by a phenomenal activity on the part of many different pathogenic organisms, gave special opportunity for the development of inflammation of the appendix; but whether by reduction of the general bodily resistance, by exciting a new attack in a chronically affected organ, by its action on the lymphoid tissues, or by an infection through the blood stream or otherwise, does not appear. Certainly some cause lay behind the increase from a percentage of 10.4 for our first year, to a rate of 44.4 for November and December, 1918, in the incidence of appendicitis requiring operation. We wish rather to place these observations on record as a minute part of the history of the great epidemic than to attempt to draw any extensive inferences from such slender data.

POSTMORTEM CESAREAN SECTION FOLLOWING AN INFLUENZAL BRONCHOPNEUMONIA

SUCCESSFUL DELIVERY OF A LIVING CHILD

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The conditions most frequently calling for a postmortem cesarean section are the sudden death of the mother from traumatism, hemorrhage or eclampsia. In the case in hand, death was the result of a bronchopneumonia following influenza.

At first glance it would appear that a number of abdominal sections might have been done during the recent pandemic of influenza; but as I look back over the records of the San Francisco Hospital, in which, during the past four months, we have handled 108 cases of influenza complicated with pregnancy, I find that in only one case was it thought advisable to do a cesarean section. Thus we find the percentage rather small.

REPORT OF CASE

Nov. 9, 1918, Mrs. L. A., aged 24, was admitted to the hospital, in her third labor. Both her last children are living. She was a woman of about 150 pounds, having done the usual housework. On admission to the ward the patient was in a moribund state, markedly cyanotic and profoundly toxic. As was later learned, she had been sick for six days prior to admission to the hospital. A hurried examination revealed a moderate bilateral basal bronchopneumonia. The fundus of the uterus was found to be 3 cm. above the level of the umbilicus. The fetal heart was readily audible and not greatly increased in rate.

As no consent was to be obtained for the operation, it was determined to wait for the patient's natural decease, and then proceed, if possible, to save the child.

From 3:30 p. m. I sat with two interns at the bedside, until at 6:50 p. m. she was pronounced dead. The fetal heart sounds were becoming less audible, and for the last fifteen minutes were so feeble that they could not be heard with a stethoscope. As soon as it was certain that death had taken place, the section was performed. An incision was made in the midline, extending 1 inch above the umbilicus, and downward to the symphysis, and going through the uterus as hurriedly as possible. The child was found to be toxic and feeble, but with very little effort at resuscitation the child began to cry. The child was not quite full term, weighing 3 pounds 15 ounces. The child lived, but died when 25 days old. The cause of death was croupous pneumonia with pleurisy. Microscopic sections of the lungs show a filling of many alveoli with fibrin, and foci of round cell infiltration with areas of necrosis. The areas were most marked around the smaller bronchioles. There was also an inflammatory deposit on the pleurae. The time elapsing after the mother's death, before the delivery of the child, was in this case about one and a half minutes.

The Buckeye in the Left Hand "Pants" Pocket.—Kansas has an illiteracy rate of 2.7 per cent., and yet there are people not in this class, wearing asafetida bags around their necks, or carrying a lump of camphor in their pockets, or contaminating the atmosphere with garlic or onion breaths as a preventive against influenza! Will the janitor please open the windows wider?—*Bulletin,* Kansas State Board of Health.

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SATURDAY, MARCH 8, 1919

FURTHER FACTS REGARDING ANTISCORBUTICS

Scurvy, a disease which once represented a menace of serious moment to large numbers of persons at certain seasons and under certain conditions, when "fresh" foods were not available in sufficient variety or abundance, has returned into prominence in recent years. Experience has shown that while the heating of milk for infant feeding may remove undesirable bacterial dangers from this essential food, it is liable at the same time to destroy certain undefined properties of the diet, in the absence of which scorbutic symptoms arise. Furthermore, under the conditions of food supply enforced in some of the theaters of war, the medical officers have also found themselves confronted with scurvy, both among the fighting units and among the inhabitants of devastated areas.

Quite aside from all theories as to the etiology of the disease, experience has demonstrated effective methods for the cure or the prevention of scurvy. In this country orange juice has acquired a growing popularity as an antiscorbutic supplement to the diet of bottle-fed infants. The difficulties in maintaining a supply of oranges at a price within the reach of all classes of persons concerned have been aggravated by the interference with normal transportation during the period of the war. This has, in fact, occasioned much concern among pediatricians in various centers. The possibility of desiccating or preserving the juice in some way at the sources of supply in order to insure a more dependable distribution of orange juice has encountered the obstacle of uncertainty raised by recent studies on the instability of antiscorbutic properties when vegetables exhibiting them are dried.[1] Thus the desiccation of cabbage seems to deprive it of antiscorbutic potency unless the drying is carried out at low temperatures and with special precautions. Chick and Rhodes,[2] of the Lister Institute for Preventive Medicine in London, have recently found, in searching for possible substitutes for the highly efficient orange juice, that fresh grapes are of little value as antiscorbutics; of the raw vegetable juices examined, raw swede juice proved to be far the most potent, approximating in value to orange juice; the raw juice of carrots was found to be much inferior, and that of beet roots practically negligible in value, so far as acceptable dosage is concerned.

From a practical standpoint the discovery of this potency of swede juice seems to be important because it promises to afford a valuable, inexpensive source of antiscorbutic material. According to the English investigators, the value of swede juice is not markedly inferior to that of fresh orange juice, so that it may be regarded as a satisfactory substitute. Its value approximates ten times that of the raw carrot and more than ten times that of raw beet root juice. Chick and Rhodes add that swede juice has been adopted in some of the English infant welfare centers, and there does not appear to be any drawback to its use in infant feeding. Curiously enough, the swede belongs to the natural order *Cruciferae,* which also includes the cabbage, perhaps the most potent of all antiscorbutic vegetables investigated.

In the case of adults living under conditions in which fresh foods are not available, a belief in the antiscorbutic potency of the juice of the West Indian lime has been cherished for decades. Arctic explorers, ships starting on long voyages without access to land, and expeditions away from sources of appropriate food supplies have been accustomed to be equipped with lime juice preserved in various ways; and there are records to show that vigorous steps were sometimes taken to enforce the actual ingestion of the dosage as ordered. The efficacy of this preventive therapy has been far from universal; and an explanation seems to be afforded by recent investigations, also conducted at the Lister Institute, by Chick[3] and her co-workers, to whom we are already indebted for valuable contributions to the prevention of scurvy. Preserved lime juice was found useless for the prevention of scurvy by the methods employed. The fresh limes have some potency; but it has now been shown that, volume for volume, their juice is only about one-fourth as effective as is lemon juice. Curiously enough, a historical study of the reported cures of scurvy with lime juice shows that the agent employed in several authenticated instances was in reality the juice of the lemon. There are instances of severe scorbutic outbreaks despite the liberal use of lime juice. This demonstrated virtue of the lemon, a fruit so widely employed in the household in modern life, affords an added illustration of the unique value of many items of diet, like certain fruits and green vegetables, for which we pay a high price despite the fact that they give no equivalent return in calories. Instinctively, perhaps, we have come to include in our dietaries articles of food which have a high physiologic value that cannot be measured in the current terms of food units.

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[1] Scurvy and Antiscorbutics, editorial, J. A. M. A. **71:** 2000 (Dec. 14) 1918.

[2] Chick, Harriette, and Rhodes, Mabel: An Investigation of the Antiscorbutic Value of the Raw Juices of Root Vegetables with a View to Their Adoption as an Adjunct to the Dietary of Infants, Lancet **2:** 774 (Dec. 7) 1918.

[3] Chick, Harriette; Hume, E. Margaret; Skelton, Ruth F., and Smith, Alice H.: The Relative Content of Antiscorbutic Principle in Limes and Lemons, Together with Some New Facts and Some Old Observations Concerning the Value of "Lime Juice" in the Prevention of Scurvy, Lancet **2:** 735 (Nov. 30) 1918.

SACCHARIN—AFTER THE WAR

The restrictions of trade and the shortage of many important supplies incident to the war have encouraged the production of substitutes in the domain of foods and drugs as well as in other fields of commerce. This has been true in far greater degree in the overseas countries than in America, where the deprivations and interferences have not been so protracted. It has frequently been remarked by those who have familiarized themselves with conditions in Germany during the latter years of the war that the entire population of the Central Empires seemed to be eating, drinking and wearing substitutes most of the time. Some of these will doubtless establish themselves as useful contributions to our mode of living—products of the ingenuity of necessity.

The war has taught us that it is no great hardship to do without certain drugs that were once regarded as next to indispensable. On the other hand, we must be on our guard lest temporary advantages gained for avowed substitutes in times of stress are allowed to become a reason for foisting on a tolerant public products that have no proper place in the everyday life of peace times.

An illustrative case is afforded by the use of saccharin, which has veritably been a gustatory blessing to hundreds of thousands of persons who were unable to secure sugar, on which they were accustomed to depend for insuring the palatability of certain foods. How large the traffic in saccharin, sanctioned by the governments of the nations affected, has been is indicated by the statement of a single British firm which itself furnished 1,785 million tablets[1] to meet the emergency. Having satisfied a need, the manufacturers appear not to be content, like munitions and other war industries, to turn their talents and plants to better uses, but suggest that the great commercial sacrifices made in setting their works into operation to produce saccharin should be rewarded, as it seems, by the permission to continue the traffic under post-war conditions.

Thus a new plea is added to the old arguments of those who wish to foist saccharin on the public. Formerly it was alleged that the chief objectors were the sugar cultivators and manufacturers. "It is true," admits a large producer of saccharin, "that saccharin is without nutritive value, and so it is not recommended as a substitute for sugar in feeding children." He contends, however, that "the highest medical authorities" are fully agreed that it is perfectly innocuous and has no effect whatever on metabolism. It is urged to have a special value in adiposity, and we are assured by this lay expert that many quite healthy persons receiving sufficient nourishment from other foods, and conscious that they are benefited by abstinence from sugar, will henceforth take advantage of the sweetening properties of saccharin.

The referee board to which the saccharin problem was referred in this country several years ago has by no means given a clean bill of health to the chemical. It has merely fixed a lower limit of apparent innocuousness and warned against promiscuously large dosage. There are still plenty of persons in the world who are not children and who do not suffer from either adiposity or diabetes. They need to be protected from the danger, not to mention the deception, of a substitute for sugar which is in no sense a true food. We doubt whether the time has arrived when any considerable portion of the world's population needs to be protected against harm from a wholesome food by the use of a chemical which has no food value and may be definitely harmful.

THE DANGERS OF INHALED DUST

In a widely circulated popular book, entitled "Dust and Its Dangers," which was published about thirty years ago, emphasis was placed on the distribution of bacteria by that form of "matter out of place" which is commonly designated as dust. This was quite appropriate at a time when the widespread distribution and previously unsuspected significance of the micro-organisms were being brought to the notice of the world at large. Since that early period in the development of modern bacteriology, preventive medicine has begun to direct attention to quite different aspects of the dust menace. The recognition of the possible pathologic effect produced by the inhalation of minute, nonliving particles of matter is by no means new. Clinical observations on the subject have long been on record; and the question as to whether certain pigmentations of the lung are due to extraneous particles or to pigmented tissue products has been debated since the days of Virchow. Nevertheless it has been due to the demands of industrial hygiene, perhaps more than any other stimulus, that careful investigation has been renewed in this field of inquiry.

It is known from industrial experience that there are distinctions between dusts of different origins, so far as their effects after inhalation are concerned. Dust rich in silica, such as is encountered in the gold mines of the Transvaal and in many potteries, is admittedly dangerous. On the other hand, in comparison with flint dust, it is believed that coal dust and shale dust are relatively harmless. An investigation conducted by Mavrogordato[1] for the English Medical Research Committee under the national insurance act has thrown some light on the distinctions just referred to. Specifically formulated, the question may be thus presented: Since it may be regarded as established that all forms of dust enter the lungs, why is it that some, such as coal, are relatively harmless, while others, such as flint, are deadly?

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[1] According to the annual report of Boots Cash Chemists, Ltd., in the London Observer, Jan. 19, 1919.

The answer appears to lie in the fact that some dusts are eliminated much more readily than others: at any rate, when the exposure is a moderate one. After intense dusting, all the dusts appear to produce much the same effects, both immediate and remote. But under the more usual industrial conditions, it seems, from Mavrogordato's investigations, that dusts which make mischief are dusts that accumulate. Coal and shale, for example, are taken up by cells which are quickly shed and consequently do not set up processes which block lymphatics. These cells frequently break down, and masses of dust are to be seen on the surface of the alveolar walls. Plugs of mucus, dust cells and dust find their way out of the lungs through the bronchi, though some dust may leave indirectly by means of the lymphatics. In other words, the more readily eliminated dusts produce a marked initial reaction with much shedding of epithelium. The flint dust and crystalline silica, by way of contrast, are taken up by cells that tend to remain in situ. They form plaques which persist, and the shedding of the epithelium is far less conspicuous. Cell proliferation is much more marked, and fibrosis may ensue. Permanent lesions are liable to be produced.

Since many persons are engaged in essential employments that compel them to pass a large portion of their time in dusty atmospheres, the question of ameliorating the conditions and averting the dangers is a serious one. Even if dust rarely kills, aside from producing considerable fibrosis of the lung it may predispose the individual to pulmonary tuberculosis. Dilution of the dust seems, by itself, to offer little promise of help in the case of the more dangerous sorts; for the dose must be extremely small in the case of such particles as flue dust and silica, if accumulation is to be avoided in the lung. There is somewhat greater prospect of relief in the observation that dusts which produce an initial reaction of epithelium shedding tend to carry the more inert forms out with them. Thus some admixture of coal dust may act as a protector when the more deadly dusts are inhaled; in fact, such chance combinations may explain the apparent immunity experienced by certain workers with flint and silica dusts. Coal dust has its special industrial risks, since it is responsible for explosions in the coal mines. This danger can be reduced to a minimum by mixing coal with inert dusts. Hence Mavrogordato remarks that the ideal would be to stop colliery explosions by adding flint and to stop phthisis by adding coal, thus holding a tenace over providence.

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[1] Mavrogordato, A.: Experiments on the Effects of Dust Inhalations, J. Hyg. **17**: 439, 1918.

Current Comment

DIETETIC VALUE OF NUTS

The war has taught us to appreciate many things which were by no means new but which had remained in partial oblivion because of the characteristic inertia of man toward a change in his traditional habits. In illustration may be cited the neglect of nuts as articles of food. Although many persons eat liberally of nuts and the vegetarians have long regarded them as a sort of staple in the diet, we venture to believe that most Americans at least are wont to class them as relishes or accessories. The suggestion to use nuts more liberally often meets the objection that they are not well digested and are likely to give rise to alimentary discomfort. Actual experiment has demonstrated, however, that the charge of inherent indigestibility is not borne out,[1] provided the nuts are consumed under proper conditions. The reported distress attending their use is probably due to inadequate mastication, so that larger masses of an impervious vegetable product are ingested; or they are eaten after an already abundant meal. Nuts are in fact highly concentrated foods, consisting essentially of proteins and fats. Chestnuts alone are rich in carbohydrate, in the form of starch, and are poor in fats. It should be borne in mind, by way of comparison, that the 100-calory portion of most nuts is very small; for example, from twelve to fifteen almonds furnish such an equivalent of food fuel. Remembering that proteins are no longer to be judged solely by their quantity, since a quality factor has been demonstrated by current methods of investigation by direct feeding to be of nutritive significance likewise, it may be asked whether the nut proteins take a reputable rank in this respect. It is probably fair to say that proteins from plant sources do not receive the dietary respect that is accorded to those of animal origin. The proteins of meat, eggs and milk are put into a superior category by a sort of popular consent, when they are contrasted with those furnished by the cereals, legumes and other green vegetables. Some surprise was created, therefore, by Hoobler's[2] experimental evidence of the high value of nut proteins in relation to human milk proteins. A similarly favorable report has just been rendered by Morgan and Heinz[3] from observations they have made on man at the University of California. The protein of almond meal was noted to have a "biologic value" superior to that of wheat gluten, itself a well utilized cereal protein source. Such carefully determined facts must be weighed against popular prejudices in considering the availability of nuts in any regimen. Even though they may not be demanded under the conditions of ordinary diet, there are not a few occasions when carbohydrate-free foods of the protein-fat type would form a welcome addition to the curtailed list that some disease or idiosyncrasy may have occasioned.

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[1] The Digestibility of Nut Oils, editorial, J. A. M. A. **71**: 467 (Aug. 10) 1918; The Utilization of Nuts as Food, ibid. **71**: 974 (Sept. 21) 1918.

[2] Hoobler, B. R.: The Effect of Human Milk Production on Diets Containing Various Forms and Quantities of Protein, Am. J. Dis. Child. **14**: 105 (Aug.) 1917.

[3] Morgan, Agnes F., and Heinz, Alice M.: Biological Values of Wheat and Almond Nitrogen, J. Biol. Chem. **37**: 215, 1919.

RESEARCHES AND REMEDIES IN RURAL SANITATION

In 1914 the U. S. Public Health Service began a special study, intensive in character and extensive in scope, of rural sanitation. Of this study, which is still in progress, Dr. L. L. Lumsden, now an assistant surgeon-general of the service, has been from the start in direct and responsible charge, and his report on three years' work in thirteen states and fifteen counties, ranging from Maryland to Kansas, has just appeared as Public Health Bulletin 94. In spite of the excessive urbanization of the last century, America is still largely rural. Moreover, city and country are more closely bound together than some realize, since, as Dr. Lumsden truly says, mosquitoes and flies regardlessly cross state lines, county lines, city lines, town lines and line fences between farms, while "the average large American city obtains its milk, vegetables and fruits from as many as five or six different states," and "insanitary conditions at farm homes in one state are often responsible for contamination of milk or other foods, causing extensive outbreaks of disease in cities, towns, villages or country neighborhoods in other states." City conditions likewise react on rural populations, through the rural resident homeward bound, the city dweller seeking refreshment in the country, and in many other ways. Hence the obvious importance of rural as well as city sanitation, the sanitary chain being never stronger than its weakest link. One of the worst defects of modern life is its want of leisure, and because of this there is danger that Dr. Lumsden's really remarkable report will fail to be read and studied as it deserves to be. For thoroughness of inquiry, for insight into a primitive state of American sanitation, and for a comprehension of the fundamental sanitary problems of our contemporary civilization, no similar report has been available. The conditions revealed by Dr. Lumsden's researches are perhaps not very different from what might have been anticipated, but it was indispensable to have them solidly established and not merely assumed or accepted. It is, however, the remedies devised, the improvements introduced, and particularly the propaganda found effective that especially excite our interest and admiration. Best of all are the striking results obtained in the direction of health and sanitary improvement and the prospect of their essential permanence. The report is illustrated by numerous and often ingenious charts and diagrams, which adorn Dr. Lumsden's story and point his sanitary tale, carrying the final conviction that, after all, it is simple, old fashioned—yet scientific—cleanness that is the foundation of our modern sanitary superstructure. Physicians should familiarize themselves with the details of this absorbing story of twentieth century sanitary research.

"FIGURES NEVER LIE"

Next to the "patent medicine" exploiters, no class has commercialized the recent epidemic of respiratory disease, or played on the public's fears more skilfully, persistently, and unscrupulously, than the various "drugless healing" sects and cults. Following the classic course, "lies, d—n lies and statistics," the latest move in this advertising campaign is the publication of statistics. These figures purport to show the vast improvement in the treatment by chiropaths, naprapaths, naturopaths, or some other "paths," over that given by scientific medicine, in dealing with the "flu," and its sequelae. Thus we find a newspaper solemnly telling its readers that the "so-called drugless doctors of New York City" have announced that during the recent epidemic they "did not lose a single case." This "announcement" the editorial writer characterizes as "astounding" and draws the "appalling conclusion" that most of the people who have died during the recent epidemic have actually been killed by practitioners of medicine! Several other equally startling deductions are drawn by the same writer from the bait so frankly cast and so voraciously swallowed, hook, line and sinker. Those who accept without question the "statistics" of the "drugless healers" to the effect that "they didn't lose a case," ignore the rather patent reasons why the empiric avoids this unpleasant catastrophe. They forget that many people have gone to such "healers" who never had the disease, self-diagnosed as influenza; they brush aside the fact that those who really had it forsook the quack as soon as they realized their danger and invoked the aid of medicine, and finally they ignore, or possibly do not realize the further fact that, it being illegal for the "drugless healers" to sign death certificates, these gentry make it a routine practice to abandon to the medical profession all cases that have reached a serious stage. All of these actualities obviously invalidate the "statistics," even supposing they were honestly collected. "In all my years of service," said the ancient driver of the four-wheeler, "statistics show that I have never lost a single passenger by drowning!" "Although I have been crossing the Atlantic for thirty years," vouchsafed the captain of the ocean greyhound, "I can prove by incontrovertible statistics that not one of my passengers was ever run over by a taxicab while in my charge." Wonderful are the uses to which statistics can be put!

WHAT IS "PTOMAIN" POISONING?

The term "ptomain" poisoning has become a cloak for ignorance. Jordan[1] says that "ptomain poisoning is a convenient refuge from etiologic uncertainty." In fact, any acute gastro-intestinal attack resulting from a great variety of causes is apt to be called "ptomain" poisoning. Selmi, in 1873, first used the word ptomain (from πτῶμα, a corpse) to include the poisonous products of putrefaction which gave the reaction then looked on as characteristic of vegetable alkaloids. From the time of Selmi, when ptomains were regarded as animal alkaloids, our conception of these substances has changed markedly. The last attempt to give precision to the term was by Vaughan,[2] who defined ptomains as intermediate cleavage products of protein decomposition. Rosenau and his associates[3] at Harvard have been searching in vain for the past year and a half for ptomains that might cause gastro-intestinal or other symptoms. Split products of protein putrefaction are readily isolated. Some of these products have physiologic activity, but none of them thus far have been demonstrated to be poisonous when taken by the mouth. The so-called ptomains isolated and described by Selmi, Nencki, Brieger, Schmiedeberg, Faust and Vaughan were usually obtained from putrid organic matter that had decomposed past the point at which it would be used as food. Furthermore, most of these substances were tested by injecting them subcutaneously or intravenously into animals. Many substances are poisonous when thus introduced parenterally, though they may be harmless by the mouth. Again, many of the so-called ptomains isolated and described have since been shown to contain impurities. Chemists are now seldom confident of the purity of protein fractions, even when obtained in crystalline form. The chemical search for split protein products as the cause of "ptomain" poisoning has practically been abandoned. Most of these split products are amins, which are either not poisonous at all, or no more so than their corresponding ammonia salts. The chemical resemblance between muscarin and cholin has directed the work toward the phosphatids, but thus far this line of research has not helped solve the puzzle of "ptomain" poisoning. Chemists avoid the use of the word ptomains, for the reason that it lacks precision. This is a curious instance of the popular use of a technical term that sounds well, but means little. Only clinicians cling to it as a convenient refuge. Ptomain is a term for chemical substances of uncertain origin, unknown nature, and doubtful existence.

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[1] Jordan, E. O.: Food Poisoning, University of Chicago Press, 1917.

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[2] Vaughan, V. C., and Novy, F. G.: Cellular Toxins, Ed. 4, Philadelphia, Lea Bros. & Co., 1902.

[3] Rosenau, M. J.: Lecture, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Jan. 20, 1919.

Electric Diagnosis of Internal Ulceration.—L. Freund writes to the *Deutsche medizinische Wochenschrift*, **44**:1345 (Dec. 5) 1918, to call attention to the information that is to be derived from the sharp local pain felt when a weak faradic current passes through any excoriation. He utilized it to detect any break in the skin in his hands before operations. He dipped his hand in the fluid of the hand jar of the "four cell electric bath" for arms and legs. The twinge of pain from even a hangnail showed at once the points to be protected with collodion. The method is applicable to the body cavities, stomach, bladder, rectum and vagina. For the stomach, he introduces a fine copper wire inside the stomach tube into the stomach, and passes a roller electrode over the surface of the body outside. The patient first drinks the barium contrast suspension, as roentgen examination usually is done at the same time. This thick suspension prevents any injury from the wire guide in the rubber tube. In sixteen persons thus tested, five complained of sharp pain at one or more points in the anterior wall of the abdomen. One of this group had a laparotomy later, and evidences were found of a healed invagination. The nine who responded negatively to the test were all clinically sound except one man with an atonic sagging stomach.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending February 28, the Medical Corps contained 21,545 officers, a decrease from the previous week of 406. The Medical Reserve Corps contained 783 officers. The total number of medical officers discharged since the beginning of the war is 12,037

Severely Wounded

The following medical officers have been reported as having been wounded severely: Eugene Robert Van Meter, Lieut., St. Louis; Harlow R. Connell, Lieut., Roanoke, Va.; Fred Vosburgh, Lieut., Castelton-on-the-Hudson, N. Y.; Frank Petty Hixon, Capt., Pensacola, Fla.; Harold B. Eaton, Lieut., Boston; Harry A. Seigall, Lieut., Hartford, Conn.; Lucius L. Handly, Lieut., Houston, Texas; Guy H. Jacobson, Lieut., Wayne City, Ill.

Weekly Bulletin A. E. F.

Feb. 3, 1919

PROMOTIONS

On Jan. 16, 1919, the chief surgeon forwarded to general headquarters a list of recommendations for promotion, including eighty-five lieutenant-colonels to the grade of colonel, 282 majors to the grade of lieutenant-colonel, 932 captains to the grade of major and 2,457 lieutenants to the grade of captain. The Weekly Bulletin points out that this is a long list because there have been great and unfortunate delays in making promotions in the Medical Department of the A. E. F., and it represents an accumulation to fill long existing vacancies. There will still remain the following vacancies: 241 in the grade of colonel, 293 in the grade of lieutenant-colonel, 1,151 in the grade of major and 1,323 in the grade of captain. In a general discussion the chief surgeon explains the reason for delays in promotion up to this time. Much of the Bulletin is devoted to the endeavor being made to control venereal diseases.

STATISTICS ON DISEASES IN THE A. E. F.

The greatest number of A. E. F. patients in base and camp hospitals and convalescent camps in France and England was in the week ending Nov. 7, 1918, when a total of 190,888 beds were occupied by sick and wounded. Of these beds 39,778 were classed as emergency beds.

On the day the armistice was signed (November 11), there were occupied or available a total of 209,134 normal beds, or beds spaced one per three linear feet of Adrian barracks or equivalent space in procured buildings. In addition, there were available space and equipment for emergency beds for 74,399 more patients, or a total of 283,533 normal and emergency beds.

On this date, there were in operation 153 base hospitals, sixty-six camp hospitals, and twelve convalescent camps.

Between November 11 and December 5, the number of normal beds was increased to 223,257, with an emergency expansion up to 296,835.

Either in hospitals actually operating at the time of signing the armistice or in buildings leased for hospital purposes or provided for in new hospital buildings authorized or under construction, there was an eventual normal bed capacity of 423,722 with an emergency expansion up to 541,000 beds.

On Jan. 23, 1919, there were 97,458 patients in base and camp hospitals and convalescent camps, of whom 18,214 were Class A men awaiting evacuation (actual patients, 79,244). There are also 33,171 patients (14,462 medical and 18,659 surgical) ready to be evacuated.

In the evacuation, mobile and field hospitals of the three armies, there were 9,765 patients at the same time.

TYPHOID AND PARATYPHOID

Cases of typhoid and paratyphoid have been reported in several organizations. In some, carriers have been found, and instructions have been issued to revaccinate all men in every organization in which two or more cases of typhoid or paratyphoid have occurred. For the first time in two months the week of February 3 showed a definite and considerable reduction in the existence of typhoid and paratyphoid.

The rates of the communicable diseases for this season of the year are considered to be creditably low. The annual rate per thousand, venereal disease, for the whole A. E. F. is 36.9, certainly a creditable record.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Belle Ellen—Nettles, R. (L.)
Huntsville—Westmoreland, H. D. (C.)
Livingston—Davidson, M. T. (L.)
Scottsboro—Boyd, H. (C.)
Selma—Harper, W. W. (C.)
Troy—Weedon, H. M. (M.)

ARIZONA

Douglas—Wright, F. T. (M.)

ARKANSAS

Hot Springs—Tarkington, G. E. (L.)
Searcy—Tapscott, S. T., Jr. (L.)

CALIFORNIA

Bakersfield — Bumgarner, G. M. (C.)
Blythe—Lowe, F. A. (L.)
Corning—Snyder, A. D. (M.)
Exeter—McLean, A. D. (C.)
Fresno—Tobin, P. A. (L.)
Los Angeles—Allen, C. S. (L.)
Humfreville, D. L. (C.)
Moore, E. C. (M.)
Rogers, A. R. (C.)
Sellew, P. K. (L.)
Oakland — Bartholomew, J. Y. (L.)
Smith, A. M. (C.)
Pasadena—Lockwood, C. D. (M.)
Petaluma—Anderson, J. G. (L.)
Salinas—Reeves, W. R. (C.)
San Diego — Wegeforth, H. M. (C.)

COLORADO

Colorado Springs—Loomis, P. A. (M.)
Stough, C. F. (M.)
Denver—Cooper, H. S. (L.)
Monument—McConnell, W. (C.)
Pueblo—Hoag, D. E. (C.)
Saleda—Booth, C. O. (L.)

CONNECTICUT

Hartford—Birdsong, J. L. (L.)
Boyce, R. V. (L.)
Stockwell, W. M. (M.)
Pomfret Center—Goodridge, F. G. (C.)
Ridgefield—Lowe, R. W. (C.)
Waterbury—Parker, T. E. (L.)

DISTRICT OF COLUMBIA

Washington—Christie, A. C. (Col.)
Hume, H. (C.)
Laughlin, J. B. (C.)

FLORIDA

Jacksonville—Bodet, R. E. (L.)

GEORGIA

Atlanta—Byrd, E. S. (C.)
Dorsey, R. T. (M.)
Lyle, W. C. (M.)
Muse, L. H. (C.)
Cartersville—Howell, S. M. (L.)
Rome—McCall, J. T. (C.)
Weston—Lunsford, G. G. (L.)

ILLINOIS

Avon—Harrod, R. W. (L.)
Chicago—Butterfield, E. H. (C.)
Dick, G. F. (M.)
Gearin, J. J. (L.)
Jirka, F. J. (L.)
Kelley, J. E. (C.)
Kerr, E. K. (M.)
Kreml, O. A. (M.)
Nyvall, Y. J. (L.)
Walk, F. D. (L.)
West, J. F. (C.)
Zaborkrtsky, J. (C.)
East St. Louis—McNary, W. F. (C.)
Gillespie—Higgins, J. R. (L.)
Irving—Canaday, R. N. (L.)
McLeansboro—Bozarth, J. A. (L.)
Oswego—Weishew, L. J. (L.)
Penfield—Wehn, C. C. (C.)
Peoria—Hinckle, W. A. (C.)
Rockford—Pearman, A. (L.)
Salem—Logan, H. L. (M.)
Springfield—Bierly, J. R. (L.)
Neal, J. R. (C.)
O'Hara, F. S. (M.)
Spring Valley — Miltenberger, R. E. (L.)
Sterling—Snavely, J. L. (L.)

INDIANA

Bicknell—Staley, T. M. (C.)
Bloomington—Whetsell, L. E. (L.)
Clayton—Jones, R. E. (C.)
Dana—Strong, D. S. (L.)
Indianapolis—Brown, E. A. (C.)
Little, J. W. (C.)
Sluss, J. W. (M.)
Wales, E. D. (M.)
Kokomo—Lung, B. D. (L.)
Logansport—Barcus, C. E. (C.)
New Albany—Winstandley, W. C. (C.)
Owensville—Strickland, K. S. (L.)
Terre Haute—Combs, M. R. (M.)
Vincennes — McCormick, H. D. (L.)

IOWA

Alexander — Rodemeyer, F. H. (L.)
Creston—Macrae, J. G. (C.)
Des Moines—Leir, C. N. O. (C.)
Russell, J. (M.)
Grinnell—Parish, O. F. (L.)
Livermore—Bowes, J. J. (L.)
Malvern—Campbell, M. S. (L.)
Postville—Blessin, O. J. (C.)
Superior—Atkins, G. L. (C.)

KANSAS

Concordia—Haughey, L. E. (C.)
Kansas City—Richmond, T. (C.)
Minneapolis—Cludas, A. L. (C.)
Sabetha—Dillingham, W. R. (C.)
Wichita—Greening, W. P. (C.)

KENTUCKY

Bradford—Comer, B. N. (L.)
Frankfort—Stewart, A. (C.)
Hartford—Pendleton, E. B. (C.)
Lot—Siler, J. E. (L.)
Louisville—Fort, F. T. (M.)
McCoy, S. C. (C.)
Woodard, R. L. (C.)
Robards—Ridley, J. U. (C.)

LOUISIANA

Delhi—May, R. L. (M.)
Donaldsonville—Thibodaux, P. T. (L.)
Jackson—Lea, J. W. (M.)

MAINE

Bangor—Howes, L. M. (C.)
Lewiston—Cummings, E. S. (C.)

MARYLAND

Baltimore—Baer, W. S. (L. C.)

MASSACHUSETTS

Boston—Babcock, H. L. (C.)
Quackenboss, A. (M.)
Thomas, J. J. (M.)
Warren, J. (M.)
Lynn—Metzger, B. (C.)
Salem—Ahearne, C. A., Jr. (C.)
Tewksbury—Peirce, G. A. (C.)
Waltham—Stiles, F. M. (C.)
Worcester—Stapleton, W. P. (L.)
Yoosuf, A. K. (C.)

MICHIGAN

Ann Arbor—Peterson, R. (M.)
Detroit—Safford, H. E. (C.)
Smith, F. H. (C.)
Grand Rapids—Coryell, J. R. (C.)
Greenville—Barr, A. S. (C.)
Henderson—Soule, G. T. (C.)
Ogden Center—Van Dusen, C. A. (L.)
Partello — Southwick, C. R. W. (L.)
Petoskey — Van Leuven, B. H. (L.)
Saginaw—Watson, R. S. (C.)

MINNESOTA

Barnesville — Patterson, C. H. (L.)
Duluth—Linneman, N. L. (C.)
Magney, F. H. (L.)
Mantorville—Adams, R. T. (C.)
Minneapolis—Hufnail, F. E. (C.)
Robertson, H. E. (M.)
Sessions, J. C. (M.)
White, S. M. (M.)
Rochester—Bissell, W. W. (C.)
Judd, E. S. (M.)
Mayo, W. J. (Col.)
O'Leary, P. A. (L.)
St. Paul—Daugherty, E. B. (C.)
McNevin, C. F. (C.)
Rutherford, W. C. (M.)

MISSISSIPPI

Biloxi—Odeneal, E. P. (M.)
Leesburg—Davis, G. C. (L.)
McComb—Otken, C. H. (C.)
Okolona—Wicks, A. F. (C.)
Richton—Gavin, E. M. (L.)
Yazoo City—McCalip, W. D. (C.)

MISSOURI

Broseley—Brandon, W. L. (L.)
Bunker—Simmons, C. C. (C.)
Kansas City — Haworth, D. B. (L.)
Koogler, J. F. (C.)
Kyger, F. B. (L.)
McBride, W. L. (M.)
Olsen, H. H. (L.)
Vernon, W. C. (C.)
La Monte—Walker, W. E. (C.)
Leeper—Owens, R. J. (L.)
Neck City—Hogan, W. G. (L.)
Oregon—Kearney, E. F. (L.)
Pleasant Hill — Scrivener, D. S. (C.)
Springfield—Delzell, W. A. (C.)
St. Joseph—Colley, E. A. (L.)
St. Louis—Margulis, A. A. (L.)
Miller, G. H. (L.)
O'Keefe, J. J. (C.)
Sauer, W. E. (C.)
Seelig, M. G. (L. C.)
Simon, F. C. (C.)
Van Meter, E. R. (L.)

MONTANA

Antelope—Vornholt, M. T. (L.)
Hardin—Drake, J. H. (C.)
Polson—Holmes, J. T. (L.)

NEBRASKA

Byron—Decker, R. F. (L.)
Collegeville—Johnson, H. H. (L.)
Omaha—Lemere, H. B. (C.)
Papillion—Magaret, O. H. (C.)
Rulo—Shepherd, W. (L.)
Sidney—Roche, R. E. (L.)

NEVADA

Reno—St. Clair, R. (C.)

NEW HAMPSHIRE

Alstead—Mousley, B. T. (C.)
Berlin—Marcou, L. B. (L.)
Keene—Holmes, R. W. (M.)
Manchester—Straw, A. G. (M.)

NEW JERSEY

Atlantic City—Salasin, S. L. (C.)
Greystone Park—Collins, L. M. (L.)
[illegible] M. (L.)
[illegible] G. L. (L.)
[illegible] (L.)
[illegible] (C.)

NEW MEXICO

Clayton—Edmondson, S. M. (C.)
Roswell—Bradley, R. L. (C.)
Springer—Thompson, L. A. (L.)

NEW YORK

Brooklyn—Boley, H. B. (L.)
Mangold, F. J. (L.)
Patrie, H. H. (L.)
Buffalo—Brady, B. H. (C.)
Fairbairn, J. F. (M.)
Hoffman, H. P. (L.)
Prior, L. H. (L.)
Short, J. E. (L.)
Corghan—Von 'Zierolshofen, P. H. (C.)
Elmira—Christian, F. L. (C.)
Greece—Hillman, W. B. (L.)
Groveland Station—Morris, J. G. (C.)
Kingston—Johnston, F. A. (M.)
New York—Azzari, R. J. (L.)
Boehm, J. B. (L.)
Cussler, E. (M.)
Dunnington, J. H. (L.)
Fried, H. (L.)
Githens, T. S. (C.)
Grattan, J. F. (C.)
Grout, G. H. (C.)
Heyd, C. G. (M.)
Levy, R. J. (L.)
Levy, R. L. (C.)
Lyle, H. H. M. (Col.)
Mandeville, S. E. (L.)
Marshack, J. (L.)
McFarland, A. H. (L.)
McLean, F. C. (M.)
Meyer, A. L. (C.)
Michaelis, H. (L.)
Moriarty, R. W. (L.)
Orgel, S. Z. (L.)
Pascal, H. S. (C.)
Ray, E. T. (C.)
Raynor, M. W. (M.)
Spitzer, S. J. (L.)
Steinfelder, J. J. (L.)
New York—Stillman, R. G. (M.)
Wyckoff, J. H. (M.)
Norwich—Hartigan, W. E. (L.)
Ossining — Schafmeister, J. F. (C.)
Oxford—Hall, B. A. (C.)
Rochester—Bullen, S. S. (L.)
Jackson, E. W. (C.)
Schenectady — McGauley, F. F. (L.)
Sullivan—Eliot, E. (M.)
Syracuse—Groat, W. A. (C.)
Wayne—Wright, A. F. (C.)
Wolcott—Houston, S. W. (L.)

NORTH CAROLINA

Hope Mills—Bradford, B. M. (L.)
Nashville—Winstead, J. A. (C.)
Raleigh—Knox, A. W. (C.)
Rosemary—Beckwith, R. P. (L.)
Sunbury—Brooks, H. E. (L.)
Wilmington—Andes, G. C. (L.)
Winston-Salem — Lockett, E. A. (M.)

NORTH DAKOTA

Fingal—MacDonald, A. C. (L.)

OHIO

Cleveland—Christie, C. D. (C.)
Follansbee, R. G. (L.)
Gauchat, P. G. (L.)
Stotter, A. L. (C.)
Columbus—Dunham, J. D. (M.)
Woods, G. W. (C.)
Delaware—Weller, V. B. (C.)
Kenton—Fox, D. C. (L.)
Lorain—Dager, W. F. (C.)
Steubenville—Maxson, C. W. (C.)
Toronto—Casey, B. L. (L.)
Uhricksville—Beck, H. A. (L.)
Youngatown—Dunn, G. D. (L.)

OKLAHOMA

Albion—Wright, P. E. (L.)
Drumright—Blachley, C. D. (L.)
Enid—Swank, J. R. (L.)
Fairview—Anderson, J. V. (L.)
Haileyville—Gardner, P. (C.)
Henryetta—Bollinger, I. W. (L.)
Muskogee—Stolper, J. H. (C.)
Oklahoma City—Newton, L. A. (L.)
Shawnee—Rice, E. E. (C.)
Wilburton—Munn, J. A. (L.)

OREGON

Grant's Pass—Stricker, F. D. (C.)
Ontario—Prinzing, J. (L.)
Portland—Crockett, E. N. (C.)
Salem—Byrd, P. W. (L.)

PENNSYLVANIA

Berlin—Esken, H. G. (C.)
Claghorn—Curtis, K. D. (L.)
Easton—Updegrove, H. C. (C.)
Etters—Roberts, S. J. (L.)
Greensburg—McKee, C. W. (C.)
Indiana—Nix, W. H. (M.)
Kennett Square—Merryman, J. W. (C.)
McKeesport—Goldberg, S. (L.)
New Florence—Tittle, H. W. (L.)
Peckville—Young, C. L. (L.)
Philadelphia—Boehringer, W. G. (L.)
Cadwalader, W. B. (M.)
Cowan, A. (C.)
Ellinger, J. E. (C.)
Elliott, J. D. (M.)
Jones, I. H. (L. C.)
Levering, J. W. (C.)
Packard, F. R. (M.)
Phillips, H. (M.)
Stellwagen, T. C., Jr. (M.)
Woolridge, J. H. (L.)
Pittsburgh—Day, E. W. (M.)
Pittston—Ransom, H. L. (L.)
Scranton—Shields, M. J. (C.)
Van Vechten, G. J. (C.)
Wormser, B. B. (C.)
Shamokin—Bogar, G. H. M. (L.)
State College—Glenn, G. C. (L.)
Tarentum—Hoch, P. G. L. (L.)
Washington—Dunkle, G. B. (C.)
Wilkes-Barre—Doyle, W. J. (C.)
Woodville—Hill, R. L. (M.)

RHODE ISLAND

Providence—Adams, F. M. (C.)
Appleton, P. (L.)

SOUTH CAROLINA

Aiken—Wyman, H. H., Jr. (C.)
Central—Bearden, J. D. (L.)
Chesterfield—Gardner, R. L. (C.)
Union—Maddox, T. (C.)

SOUTH DAKOTA

Britton—Kaps, F. O. (C.)
Sioux Falls—Kellar, W. F. (C.)

TENNESSEE

Ben Franklin—Morehead, T. R. (C.)
Columbia—Biddle, P. D. (C.)
Greeneville—Lane, J. F. (L.)
Knoxville—Hutson, G. C. (L.)
White, W. H. L. (C.)
Laurel Bloomery — Widener, W. W. (L.)
Memphis—Bailey, C. O. (L.)
Chilton, C. M. (L.)
Nashville—Teachout, S. R. (C.)
Woodstock — Henderson, W. L. (C.)

TEXAS

Amarillo—Puckett, B. M. (L.)
Dallas—Bourland, J. W. (C.)
El Paso—Clutter, B. F. (L.)
Fort Worth—McKean, R. W. (L.)
Galveston—Hoecker, W. L. (C.)
Ganado—Dobbs, J. C. (C.)
Gatesville—Graves, E. (C.)
Harlingen—McBride, G. A. (M.)
Henrietta—Jones, T. K. (C.)
Port Arthur—Reed, J. P. (L.)
San Antonio—Brown, A. A. (C.)
DePew, E. V. (M.)
Venable, C. S. (M.)
San Marcos — Williams, M. C. (L.)
Shalowater—Bounds, R. W. (L.)

VERMONT

Lyndonville—Brown, D. R. (L.)

VIRGINIA

Cardinal—Sandberg, E. T. (C.)
Eastville—Trower, W. B. (L.)
Hopewell—Perry, S. B. (L.)
Richmond—Flanagan, E. L. (C.)
Roanoke—Trout, H. H. (M.)

WASHINGTON

Puyallup—Karshner, W. M. (C.)
Seattle—Read, H. M. (M.)
Spokane — Harrington, W. W. (C.)

WEST VIRGINIA

Marlinton—Price, N. R. (C.)
Sullivan—Koiner, W. W. (C.)

WISCONSIN

Evansville—Cook, C. S. (L.)
Green Bay—King, G. F. (C.)
Livingston—Treglow, L. H. (C.)
Merton—Woodhead, F. J. (C.)
Milwaukee—Roby, H. S. (C.)
Nashtotah—Dempsey, G. P. (L.)
Oconomowoc—Stuesser, C. (L.)
Rhinelander — Richards, C. A. (M.)
Sheboygan—Gunther, O. T. (L.)
Soldier's Grove—Peterson, N. A. (C.)
Tomahawk—Pearson, L. M. (L.)
West Allis—McCorkle, S. C. (L.)

WYOMING

Sheridan—Newcomer, N. B. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Charlton, A. T.
Dickson, A. R.
Olds, W. H.
San Francisco—White, A. H.
Upland—Craig, J. B.

COLORADO

Denver—Milligan, C. F.
Shea, R. M.

DISTRICT OF COLUMBIA

Washington—Lewis, H. S.

GEORGIA

Atlanta—Johnson, T. C.

ILLINOIS

Charleston—Johnston, H. C.

NEBRASKA

Wauneta—Bailey, B. G.

NEVADA

Reno—Dahl, W. Z.

NEW JERSEY

Trenton—Watts, W.

NEW YORK

Brooklyn—Bartley, S. P.
Moore, J. L.
Middletown—Cook, F. H.
New York—Hunt, W. M.

NORTH CAROLINA

Raleigh—Royster, H. A.

OHIO

Toledo—Ramsey, T. L.

PENNSYLVANIA

Philadelphia—Ross, G. S.
Scheehle, J. E.

RHODE ISLAND

Newport—Rosser, C. M.
Providence—Matteson, G. A.

SOUTH CAROLINA

Clemson College—Redfern, T. C.

VIRGINIA

Suffolk—White, L. W.

WASHINGTON

Seattle—Nickson, D. H.

WISCONSIN

Ridgeway—Lee, D. R.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Sherman, Ohio, as camp surgeon, from Camp McClellan, Lieut.-Col. A. W. SCHOENLEBER.

To Fort McPherson, Ga., from Camp Dix, Major W. E. DRENNEN, Birmingham; from Camp Sheridan, Capt. E. SWANN, Marion.

Alaska

To Camp Lewis, Wash., base hospital, from Camp Fremont, Capt. J. H. MUSTARD, Nome.

Arizona

To Fort Des Moines, Iowa, from Camp Dix, Capt. R. D. KENNEDY, Globe.

To report to the commanding general, Western Department, from Camp Cody, Lieut. C. W. ADAMS, Globe.

California

To Fort Des Moines, Iowa, from Camp Meade, Capt. G. E. FULLER, Chula Vista.

To Philippine Department, from Camp Kearney, Major W. C. THOMAS.

To report to the commanding general, Western Department, from Camp Cody, Capt. C. B. HARE, San Jose.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Lieut. E. J. CHIDELLA, San Francisco.

To Tobyhanna, Pa., from Camp Lee, Capt. C. B. ADAMS, Los Angeles.

To Washington, D. C., from San Francisco, Major W. C. VON KESSLER.

The following order has been revoked: *To Denver, Colo.,* from Camp Kearney, Lieut. J. B. LUCKIE, Pasadena.

Canal Zone

To Camp Upton, N. Y., from Camp Dix, Major E P. BEVERLEY, Balboa.

Colorado

To Denver, Colo., as attending surgeon, from Fort Logan, Major W. W. GRANT, Denver.

To report by wire to the commanding general, Western Department, from Camp Lewis, Lieut. G. B. LEWIS, Denver.

Connecticut

To Camp Upton, N. Y., from Camp Wadsworth, Capt. G. M. MUREN, Norwalk.

District of Columbia

To Detroit, Mich., from Walter Reed General Hospital, Lieut. R. H. LEECE, Washington.

Florida

To Roland Park, Md., from Camp Joseph E. Johnston, Lieut. I. K. LOVETT.

Georgia

To Camp Bowie, Texas, base hospital, from Camp Logan, Lieut. R. F. Wilson, Atlanta.

Illinois

To Camp Custer, Mich., to examine the command for cardiovascular diseases, from Camp Beauregard, Lieut. E. F. MIELKE, Chicago.

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. M. LAMPERT, Chicago.

To Camp Meade, Md., base hospital, from Camp Grant, Major F. M. PHIFER, Chicago.

To Camp Upton, N. Y., from Camp Grant, Lieut. M. ROSENSTIEL, Chicago.

To Camp Zachary Taylor, Ky., base hospital, from Camp Greene, Lieut. G. E. PFEIFFER, Chicago; from Camp Sherman, Capt. R. S. BARNSBACK, Edwardsville; from Fort Riley, Lieut. W. H. HOWARD, Chicago.

To Chicago, Ill., from Camp MacArthur, Capt. H. G. LAMPE, Chicago.

To Fort Sheridan, Ill., from Camp Meade, Capt. F. P. HORAN, Evanston; from Camp Shelby, Lieut. P. T. DIAMOND, Evanston.

To Fort Snelling, Minn., from Camp Joseph E. Johnston, Lieut. J. P. GRAF, Chicago.

To Houston, Texas, from San Antonio Capt. H. E. MIZE, Chicago.

To report to the commanding general, Central Department, from Toledo, Lieut. L. B. CLINTON, Chicago. Southern Department, from Camp MacArthur, Lieut. A. W. GARLITZ, Danville.

Indiana

To Cape May, N. J., from Camp Wadsworth, Lieut. F. J. McMICHAEL, Gary.

To Chicago, Ill., from Camp Macarthur, Lieut. C. V. DAVISSON, West Lafayette.

To Fort McHenry, Md., from Houston, Lieut. B. J. PETERS, Kokomo.

To Philadelphia, Pa., from Camp 'Zachary Taylor, Capt. H. K. LANGDON, Indianapolis.

To Walter Reed General Hospital, D. C., for instruction, from Camp Meade, Capt. W. W. CAREY, Fort Wayne.

The following orders have been revoked: *To Detroit, Mich.,* from Camp Gordon, Lieut. D. T. MILLER, Terre Haute. *To San Francisco, Calif.,* from Camp Jackson, Lieut. E. E. FREEMAN, Greentown.

Kansas

To Belleville, Ill., Scott Field, from Vancouver Barracks, Capt. W. A. McCULOUGH, Manhattan.

To Camp Dodge, Iowa, base hospital, from Camp MacArthur, Capt. W. C. CHANEY, Independence.

To Chicago, Ill., from Fort McHenry, Lieut. C. H. SMITH, Pittsburg.

To Fort Riley, base hospital, from Camp MacArthur, Lieut. W. W. REED, Blue Rapids.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. S. B. MARKS, Lexington.

To Fort Oglethorpe, from Camp McClellan, Capt. G. W. THRELKELD, Prospect.

Louisiana

To Camp Upton, N. Y., as camp surgeon, from Camp Beauregard, Col. G. H. SCOTT.

To Camp Zachary Taylor, Ky., base hospital, from Camp Upton, Capt. F. J. FRATER, Shreveport.

To Fort Oglethorpe, from Camp Beauregard, Major G. D. FRANCE.

Maryland

To Camp Meade, Md., base hospital, from Camp Dix, Lieut.-Col. A. M. SHIPLEY, Baltimore.

To Camp Travis, Texas, base hospital, from Camp MacArthur, Capt. I. I. HIRSCHMAN, Baltimore.

To Fort McHenry, Md., from Camp Dix, Capt. H. W. BRENT, Lieut. M. J. EGAN, Jr., Baltimore; from Hoboken, Major R. F. KIEFFER, Hagerstown.

Massachusetts

To Boston, Mass., from Camp Dix, Lieut. F. W. MARVIN, Boston; from Hoboken, Col. H. CUSHING, Boston.

To Camp Devens, Mass., base hospital, from Aberdeen, Capt. H. C. PERKINS, Boston.

To Camp Zachary Taylor, Ky., base hospital, from Fort Riley, Lieut. J. J. H. HILTON, Lawrence.

To Everman, Texas, from Vancouver Barracks, Lieut. L. J. ULLIAN, Boston.

To Fort Sam Houston, Texas, base hospital, from Camp Travis, Lieut. D. H. NISBET, Boston.

To Lakewood, N. J., from Camp Zachary Taylor, Lieut. T. E. BUCKMAN, Boston.

To Newport News, Va., from Camp Grant, Lieut. A. E. MILLS, Somerville.

To Philippine Department, from Hoboken, Lieut. S. V. KIBBY, Chelsea.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Hoboken, Lieut. C. W. BRUNINGHAUS, Worcester.

Michigan

To Camp Gordon, Ga., base hospital, from Camp MacArthur, Capt. J. O. PARKER, Owosso.

To Detroit, Mich., from Army Medical School, Major G. C. KIDNER, Detroit; from Camp Jackson, Lieut. I. E. BITTKER, Detroit.

To Fort Leavenworth, Kan., from Camp Dix, Capt. R. W. KRAFT, Ann Arbor.

To Fort Sam Houston, Texas, base hospital, from Camp Cody, Lieut. F. R. OSTRANDER, Lansing.

To report to the commanding general, Western Department, from Missoula, Lieut. H. A. KIRKHAM, Mount Clemens.

Minnesota

To Fort Snelling, Minn., from Camp Dix, Lieut. A. M. HANSON, Faribault.

To Washington, D. C., Surgeon-General's Office, from Camp A. A. Humphreys, Lieut. H. D. NEWKIRK, Minneapolis; from Mayo Clinic, Col. C. H. MAYO, Rochester.

Mississippi

To Eastview, N. Y., from Walter Reed General Hospital, Capt. J. T. HOSEY, Enterprise.

Missouri

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. H. S. LANGSDORF, St. Louis.

To Camp Knox, Ky., from Camp Cody, Lieut. E. B. RIDER, Kansas City.

To Camp Upton, N. Y., from Camp Crane, Capt. C. H. HECKER, St. Louis.

To Camp Zachary Taylor, Ky., base hospital, from Camp MacArthur, Capt. G. A. MELLIES, St. Louis.

To Fort Des Moines, Iowa, from Camp Dix, Lieut. S. F. WENNERMAN, St. Louis.

To Fort McHenry, Md., from Camp Dix, Capt. F. J. TAINTER, St. Charles; from Fort Riley, Capt. W. A. BECKEMEYER, Sedalia.

To Lakewood, N. J., and on completion *to Williamsbridge, N. Y.*, from Camp Meade, Lieut. J. F. McFADDEN, St. Louis.

To San Francisco, Calif., from Camp Hancock, Capt. W. J. LYNN, Kansas City.

The following order has been revoked: *To Camp Crane, Pa.,* from Hoboken, Lieut. F. F. HAAS, St. Louis.

Montana

To report to the commanding general, Western Department, from Camp Cody, Lieut. E. F. SWARTHOUT, Sykeston.

Nebraska

To Detroit, Mich., from Camp Dix, Major J. M. PATTON, Omaha.

To report to the commanding general, Western Department, from Camp Cody, Major L. B. STURDEVANT, Lincoln.

New Hampshire

To Army Medical School for instruction, from Walter Reed General Hospital, Lieut. A. F. SARGENT, Pittsfield.

New Jersey

To Camp Grant, Ill., base hospital, from Chicago, Lieut. H. J. PERLBERG, Jersey City.

To Newport News, Va., from Camp Hancock, Lieut. C. B. KEENEY, Summit.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. W. L. KELLER.

New Mexico

To Camp Zachary Taylor, Ky., base hospital, from Camp Cody, Capt. C. S. LOSEY, East Las Vegas.

New York

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. N. S. SCHIFF, New York.

To Camp Dodge, Iowa, base hospital, from Camp Devens, Capt. W. S. DRISCOLL, Buffalo.

To Camp Meade, Md., base hospital, from Camp Dix, Lieut. K. S. STEELE, New York.

To Camp Sevier, S. C., base hospital, from Camp Dix, Lieut. J. R. PATTON, Staten Island.

To Camp Zachary Taylor, Ky., base hospital, from Fort Riley, Capt. J. J. BEARD, Cobleskill.

To Carlisle, Pa., from Walter Reed General Hospital, Capt. J. R. HUNTER, New York.

To Colonia, N. J., from Camp Dix, Capt. K. DWIGHT, New York; from Madison Barracks, Lieut. H. H. JOY, New York.

To Detroit, Mich., from Rochester, Lieut. G. E. STANBRO, Springville.

To East Norfolk, Mass., from Camp Dix, Lieut. P. L. DODGE, Poughkeepsie.

To Fort Des Moines, Iowa, from Camp Logan, Capt. S. F. WEITZNER, New York.

To Fort Porter, N. Y., from Camp Devens, Capt. J. H. CARR, Buffalo.

To Fort Sam Houston, Texas, from Camp Beauregard, Lieut. J. RESNIK, New York. Base hospital, from Camp Cody, Capt. A. AVATA, New York.

To Hoboken, N. J., from East Norfolk, Lieut. S. KOROWITZ, New York.

To Lakewood, N. J., from Camp Dix, Major B. C. PHILLIPS, New York.

To New Haven, Conn., from Camp Greene, Capt. T. S. WEST, Yonkers.

To Newport News, Va., from Camp Shelby, Lieut. H. A. PATTERSON, Buffalo.

To Otisville, N. Y., from Camp Custer, Capt. F. J. HERBIG, Staten Island.

To Philippine Department, from Camp Meade, Lieut. R. BOGAN, Brooklyn.

To Rockefeller Institute for instruction, and on completion *to Rochester, Minn.*, Mayo Clinic, for instruction, from Army Medical School, Lieut. W. D. GILL, New York.

To Tobyhanna, N. Y., from Washington, D. C., Capt. E. L. AYME, New York.

The following order has been revoked: *To Fort Snelling, Minn.*, from Camp Dix, Major E. L. HANES, Rochester.

North Carolina

To Camp Abraham Eustis, Va., from Camp Greene, Lieut. J. J. MOORE.

To Camp Wadsworth, S. C., base hospital, from Camp McClellan, Lieut. J. C. RICH, Candler.

To Denver, Colo., from Oteen, Lieut. P. H. CHARBONNOT.

Ohio

To Camp Sherman, Ohio, from Parkview, Pa., Lieut. H. S. JAMES, McArthur.

To Camp Upton, N. Y., base hospital, from Camp MacArthur, Lieut. W. H. HODGES, Columbus.

To Chicago, Ill., from Fort McPherson, Lieut. C. M. BRAY, Cleveland.

To Fort McDowell, Calif., from Camp Sherman, Lieut.-Col. W. T. CADE, Jr.

To Fort McHenry, Md., from the Surgeon-General's Office, Lieut.-Col. J. A. SHERBONDY, Youngstown.

To Fort McPherson, Ga., from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Camp Pike, Ark., base hospital, from Camp Cody, Lieut. R. L. BROWNING, Haileyville.

To Camp Zachary Taylor, Ky., base hospital, from Camp MacArthur, Capt. E. F. DAVIS, Oklahoma City.

Oregon

To report to the commanding general, Southern Department, from Camp Lewis, Major I. B. BARTLE, North Bend.

Pennsylvania

To Camp Sherman, Ohio, base hospital, from Camp Dodge, Capt. S. STALBERG, Philadelphia.

To Camp Upton, N. Y., from Camp Dix, Lieut. W. H. MACKAY, Harrisburg.

To Camp Wadsworth, S. C., base hospital, from Waynesville, Major W. G. TURNBULL, Cresson.

To Fort Oglethorpe, from Camp McClellan, Lieut. I. HENDEL, Philadelphia.

To Walter Reed General Hospital, D. C., from Camp Zachary Taylor, Capt. H. H. TURNER, Pittsburgh.

To Washington, D. C., Surgeon-General's Office, from Camp Sheridan, Capt. J. G. TAYLOR, Tunkhannock.

The following order has been revoked: *To Camp Meade, Md.,* from Hoboken, Capt. J. D. CALDWELL, Irwin.

Philippine Islands

To San Francisco, Calif., from Philippine Department, Major A. J. CANNING.

Porto Rico

To Washington, D. C., U. S. Soldiers' Home, from Army Medical School, Lieut. C. S. MOSS, Jr., Ponce.

South Carolina

To Camp Meade, Md., from Camp Wadsworth, Major H. F. LINCOLN.

To Camp Shelby, Miss., as camp surgeon, from Camp Wadsworth, Lieut.-Col. J. F. JOHNSTON.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Fort Sam Houston, Texas*, base hospital, from Camp Sevier, Lieut.-Col. C. E. FRONK.

Tennessee

To Camp Meade, Md., base hospital, from Camp Dix, Major R. W. BILLINGTON, Nashville.

Texas

To Camp Upton, N. Y., from Camp Crane, Lieut. L. SCHELLER, Beaumont.

To Fort D. A. Russell, Wyo., from Camp Logan, Lieut.-Col. J. A. BURKET.

To Fort Sam Houston, Texas, base hospital, from Fort Bayard, Major I. S. KAHN, San Antonio; from Fort Sill, Capt. J. H. BRICE, Lamesa.

To Fort Sill, Okla., base hospital, from Camp MacArthur, Capt. C. E. DURHAM, Hico.

To report to the commanding general, Southern Department, from Camp MacArthur, Major H. B. JESTER, Corsicana.

The following order has been revoked: *To Camp Cody, N. M.*, base hospital, from Southern Department, Capt. F. L. PASCHALL, San Antonio.

Utah

To Fort Douglas, Utah, from Camp Cody, Capt. C. E. DORLAND, Devil's Slide.

To Fort Sheridan, Ill., from Fort McPherson, Lieut. H. SWANBERG, Salt Lake City.

Virginia

To Camp Dodge, Iowa, base hospital, from Walter Reed General Hospital, Capt. C. M. EDWARDS, Richmond.

To Camp Lee, Va., Major J. C. BOWMAN, East Radford. Base hospital, from Camp Dix, Major J. W. CARROLL, Lynchburg.

To Camp Pike, Ark., base hospital, from Fort Sill, Capt. L. N. HARRIS, Harrisonburg.

To Fort McHenry, Md., from Camp Dix, Capt. J. F. GEISINGER, Richmond.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major H. H. TROUT, Roanoke.

Washington

To San Francisco, Calif., from Camp Lewis Capt. H B. CLOUGH, Tenasket.

West Virginia

The following order has been revoked: *To San Francisco, Calif.*, from Camp Zachary Taylor, Capt. L. A. PETTY, Charleston.

Wisconsin

To Fort McHenry, Md., from Camp Joseph E. Johnston, Capt. B. F. HOYT, South Kaukauna.

To report to the commanding general, Western Department, from Camp Cody, Capt. M. C. CRANE, Osseo.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Fort Sheridan, Ill.,* from Camp Custer, Lieut. I. E. LEVITAS, Green Bay.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Acting Asst. Surg. L. L. SOLOMON, proceed to Washington for conference relative to venereal disease control measures in Kentucky.

Special Investigator C. W. METZ, proceed to Washington for conference relative to investigation after returning to work of the Carnegie Institution.

Sanitary Engr. H. H. CROHURST, relieved at Fort Worth, Texas. Proceed to Wilmington, N. C., for studies of sewage disposal.

Asst. Sanitary Engr. S. B. BOWNE, proceed to Memphis, Tenn., for completion of records of Service work at Millington.

Asst. Sanitary Engr. W. A. HARDENBURG, relieved at Fort Worth, Texas, proceed to Wilmington, N. C., for studies of sewage disposal.

Scient. Asst. C. W. CRANE, proceed to Hattiesburg, Miss., via Louisville, Ky., to take over the operations of the venereal disease clinic.

Supervising Nurse ANN DOYLE, proceed to New York, N. Y., and Elizabeth, N. J., for the purpose of presenting the subject of venereal disease control before the Lincoln Hospital and Home Training School for Nurses on March 18, 1919, and the annual meeting of the New Jersey State Nurses' Association April 1, 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Influenza.—According to the report of Dr. William C. Hassler, health officer of San Francisco, out of an appropriation of $50,000 for combating influenza in the city, $35,293 was spent for that purpose. The secretary of the state board of health, Dr. W. F. Kellogg, late in February sent out circular letters to local health boards in an endeavor to determine whether there was a third wave of epidemic influenza throughout the state. The indications were that there were only local rises in the number of cases in widely scattered communities.

FLORIDA

Venereal Clinic Opens.—A venereal clinic was opend at the old City Hospital, Miami, January 24, by the state board of health and the United States Public Health Service. The clinic is open from 8 to 9 in the morning, and 5 to 6 in the evening.

Automobile Service Agent Victimizes Physicians.—We are informed by Dr. James V. Freeman of Jacksonville that an agent giving the name of Smith and claiming to represent an automobile service company of St. Louis is proffering to physicians membership in this organization at $50. Dr. Freeman wrote to the headquarters of the association and finds that there is no such concern within the knowledge of the postal department.

ILLINOIS

Dispensary for Decatur.—Dr. George G. Taylor, of the division of social hygiene, state department of health, Springfield, has arranged for the opening of a dispensary in that city for the treatment of venereal diseases. The equipment will be furnished by the department of health, and the dispensary will be operated by the city under state supervision.

Anniversary Meeting.—The seventy-first anniversary meeting of the Peoria Medical Society was held, February 17. Dr. Rolland L. Green, Peoria, president, acted as toastmaster; names of forty-six members of the society who have served during the war were printed on the program as an honor roll, and the addresses made dealt with the bravery and sacrifices of American soldiers.

Memorial for Soldiers.—A movement for a hospital rather than a community house as a soldier's memorial for Highland Park was advanced, February 27, at a meeting of 150 women of that suburb, at which it was agreed by the hospital authorities that the hospital be rededicated as a memorial, provided enough money is raised to build an annex for the treatment of contagious disease patients.

Influenza.—A second epidemic of influenza was reported from Duquoin, February 28, where it was said there were 300 cases reported, with a number of deaths; fifty cases were reported from Sunfield in the same neighborhood, and many cases among the farmers. The state health department reports influenza as leading in the number of contagious disease cases, the number for the week ending February 22 being 1,680, of which Chicago had 498.

Illegal Practitioners Sent to Jail.—Jeff Mardon, East St. Louis, was arrested by an inspector of the department of registration and education for practicing medicine without a license. He was fined by the court but was unable to pay it. He was then committed to the county jail for two months.——Dr. J. J. Vizgird of St. Louis was arrested by the department of registration and education for practicing medicine in Illinois without a license. Vizgird was unable to give bond and is now in jail awaiting trial. This is the third time Vizgird has been in the court in St. Clair County for practicing in Illinois without a license.

Chicago

New Passavant Hospital.—A new Passavant Hospital to cost about $1,000,000 is to be built to replace the present hospital at Superior and LaSalle streets.

Hawkins in Jail.—The self-styled divine healer known as the "Rev. Dr." Walter Hawkins was again taken into custody, February 21, on a charge of violation of the medical practice act. Hawkins now has five such charges pending against him.

Personal.—Harry D. Orr, Lieutenant-Colonel, M. C., U. S. Army, formerly commanding officer of the 108th Sanitary Train, 133d Division, has been appointed division surgeon of the Thirty-Third Division, which is located in the Duchy of Luxembourg near Treves, Germany, in reserve for the Third American Army.——Walter J. Sullivan, Lieutenant, M. C., U. S. Army, who was severely wounded last May, after four months in a hospital in London was returned to Marseilles, and has been reassigned to duty with the British Expeditionary Forces.——Maurice L. Goodkind, Dallas Phemister, Samuel C. Plummer and William McI. Thompson, Majors, M. C., U. S. Army, and George H. Miller and William F. Bernart, Captains, M. C., returned from abroad on the U. S. S. *President Grant,* February 26.——Carey Culbertson, Major, M. C., U. S. Army, who has been on duty at Camp Pike, has been discharged and reached Chicago, March 2.——Andrew J. Lyons, Major, M. C., U. S. Army, has returned from abroad.——Dr. Samuel J. Walker, who went to Greece with the American Red Cross Medical Mission last year, is now on duty in the remote districts in Macedonia.——Dr. Tracy H. Clark has been elected president of the medical section of the National Fraternity Congress of America.——Joseph A. Capps, Lieutenant-Colonel, M. C., and Ray H. Davies, Major, M. C., U. S. Army, have returned from abroad.——Herbert H. Frothingham, Major, M. C., U. S. Army, who has been on duty at Fort Des Moines as chief of the medical service for more than a year, has returned to Chicago and resumed practice.

KANSAS

Personal.—Dr. Dellett E. Bronson, Olathe, has been appointed physician of Johnson County.——Dr. Samuel J. Herrick, Everest, announces his retirement after thirty years of practice.

Appropriation Asked.—Senator Milligan, Garnett, has introduced into the Kansas legislature a bill for an appropriation of $25,000 for the purchase of vaccine to aid in the control of epidemics, and $25,000 additional for the state board of health, to be used in controlling epidemics in any way it may be deemed best.

New Officers.—At the annual meeting of the Barton County Medical Society, held in Hoisington, Dr. Horace C. Embry was elected president, Dr. Thomas J. Brown, vice president, and Dr. Benjamin S. Pennington, secretary-treasurer, all of Hoisington.——The Leavenworth County Medical Society at Leavenworth, February 10, elected Dr. Charles J. McGee president; Dr. Clarence C. Goddard vice president, and Dr. Jacob L. Everhardy secretary-treasurer, all of Leavenworth.

Cost of Preventable Disease.—Dr. John J. Sippy, Topeka, epidemiologist of the Kansas State Board of Health, announces $11,000,000 as the sum which preventable diseases cost the state of Kansas during 1918. These diseases were typhoid fever, tuberculosis, smallpox, scarlet fever and diphtheria. The state board of health is endeavoring to convince the legislature that it should divide the state into forty health districts, each supervised by a competent official, who will devote his entire time to the work.

Proceedings in Paternity.—A bill entitled "Proceedings in Paternity" which is of special interest to physicians has been introduced in the Kansas legislature by Dr. Lydia Allen DeVilbiss, director of the division of child hygiene, state board of health, Topeka. The bill provides that any physician, nurse, midwife or other attendant on the birth of a child born out of lawful wedlock shall, under penalty of misdemeanor, report the fact in writing within ten days to the juvenile court, whereupon it becomes the duty of the court to institute inquiry proceedings. In this manner, the responsibility for establishing the parenthood of a child born out of lawful wedlock is shifted from the girl-mother to the state of Kansas. The man found by a judge to be the father of the child is charged with the same responsibility for the maintenance, education and care as is now imposed or shall in the future be imposed on a father of a child born in lawful wedlock of like age and capacity.

MARYLAND

Personal.—J. Albert Chatard, Major, M. C., U S. Army, Baltimore, chief of the medical service at Base Hospital No. 78, which was located near St. Mihiel, France, has returned to the United States and is now stationed at Camp Dix, awaiting discharge.——Lloyd B. Whitham, Captain, M. C., U. S. Army, a member of the Johns Hopkins Unit and chief surgeon of the advanced eye center of the American Expeditionary Forces, has returned to his home in Baltimore.——Richard F. Kieffer, Major, M. C., U. S. Army, Hagerstown, who was in command of Base Hospital No. 18 (the Johns Hopkins Unit), Louis J. Casamajor, Major, M. C., U. S. Army, and George R. Dunn, Captain, M. C., U. S. Army, also of Base Hospital No. 18, are to be retained for further service. The remainder of the staff have received their discharge.——Peregrine Wroth, Captain, M. C., U. S. Army, Hagerstown, who has been with the medical division of the U. S. Army in France, has arrived in this country and is stationed at Camp Dix, N. J.

MISSOURI

Fire in Hospital.—A disastrous fire almost destroyed St. Mary's Hospital at Jefferson City, February 20, endangering the lives of patients and nurses. The citizens have begun steps for immediate reconstruction of the building.

Health Bill.—The state board of health has introduced a bill in the legislature to give the board broader powers, especially in regard to communicable diseases and better control of county health officers, and the children's code commission has prepared a series of bills which, if passed, will establish adequate measures for the intelligent conservation of child life. In his message to the legislature, Governor Gardner has advocated the passage of these measures. At present the Missouri board cannot participate in the federal appropriation for the control of venereal diseases because the board of health cannot legally declare what diseases are communicable or require reports.

Personal.—John F. Binnie, Lieutenant-Colonel, M. C., U. S. Army, Kansas City, is reported to be en route from France. Colonel Binnie was in charge of Base Hospital Unit 28 when he was sent overseas, but was later made chief consulting surgeon of the Third Army Corps, and afterward appointed chief consulting surgeon for all the base hospitals at Limoges.——Dr. Wilson J. Ferguson, Sedalia, has been reappointed a member of the state board of health in the place of Dr. Andrew W. McAlester, Columbia. Dr. Ferguson was president of the state board of health when he accepted a commission in the Army, and Dr. McAlester was appointed to fill the vacancy thus created. On the return of Dr. Ferguson, Dr. McAlester resigned and requested that Dr. Ferguson be reappointed to his old position.

Volunteers for Medical Inspection.—Thirty-two physicians in Kansas City have volunteered their services for medical inspection of the children in public schools. Many of the citizens of Kansas City, especially the mothers with enlightened ideas of modern methods of preventing disease, have repeatedly petitioned the local board of health to establish a system of medical inspection of schoolchildren, but all efforts in this direction have proved futile. It is said that the parochial schools provide medical inspection for their pupils. Some work has been done in public schools through the generosity of private citizens and the voluntary cooperation of members of the Jackson County Medical Society, but as yet the city authorities have not assumed the responsibility that should be theirs in protecting the children and the general public from the spread of communicable diseases originating among schoolchildren.

St. Louis

Military Medicine Meeting.—The meeting of the St. Louis Medical Society, March 1, was devoted to military medicine. Dr. Arthur W. Proetz spoke on Base Hospital No. 21 in France. Dr. Robert E. Schlueter considered United States base hospitals. Dr. Stanley S. Burns described an evacuation and field hospital. Dr. Malcolm A. Bliss detailed the work in the recruiting depot of the line officers' training camp.

Chiropractors Arrested.—Four chiropractors were arrested in St. Louis, February 28, at the instance of the health department, charged with unlawfully practicing as physicians. The representatives of the health department assert that they consulted the four chiropractors on different dates and that each member of the fraternity of spinal manipulators diagnosed a malady although both of the investigators were in perfect physical condition, and charged fees for their medical opinion.

NEW YORK

Meningitis Carrier Detected.—Officials of the state department of health, Albany, believe they have prevented a serious outbreak of cerebrospinal meningitis by the prompt detection and isolation of a meningitis carrier. The carrier was a soldier who returned a short time ago to his home at New Baltimore. Soon after his return, his niece was stricken with cerebrospinal meningitis, and the soldier was the only one of the contacts to respond positively to the test. He was accordingly isolated, and no other case of the disease developed.

Postgraduate Course in Infectious Diseases and Public Health.—Arrangements have just been perfected by which a new course in infectious diseases and public health is being given under the joint direction of the Albany Medical College and the New York State Department of Health. The new course started, March 5, and is open both to physicians and health officers, but will have no connection with undergraduate instruction. The course will be under the general supervision of Dr. Charles C. Duryee, Schenectady, sanitary supervisor, state department of health, Albany, to whom all correspondence regarding the course should be addressed. The fee is $25, payable in advance, or in monthly instalments if desired. Those who have completed any of the various courses of instruction for health officers, either at Albany or elsewhere in the saate, are invited to attend the course at a nominal fee of $5. Attendance of one day weekly during March and April, and one and a half days during May and the first two weeks in June, will be required. On completion of the course and a satisfactory examination, a certificate will be issued.

Sanitary Supervisors' Conference.—A conference of the sanitary supervisors with the directors of divisions of the state department of health was held at Albany, February 25, 26 and 27. At the first meeting Dr. Harry A. Bray, acting superintendent of the New York State Hospital for Incipient Tuberculosis at Raybrook, gave an address on the best methods of diagnosing incipient tuberculosis; Dr. Joseph S. Lawrence, chief of the bureau of venereal diseases, discussed pneumonia serum and its administration, and Dr. James C. Ayer, of the same bureau, demonstrated the administering of arsphenamin. In the evening a talk was given at the Elk's Club on syphilis and gonorrhea by Dr. Frederick S. Honsinger, Syracuse, of the bureau of venereal diseases, the talk being followed by a presentation of the film "Fit to Win." On the second day the directors of divisions discussed their problems and future plans so far as they were related to the work of the sanitary supervisors. The organization of health conservation committees was also taken under consideration. In the afternoon a conference was held between the supervisor of public health nurses and the nurses of the department. A second conference also was held between the orthopedic surgeon of the department and the infantile paralysis after-care staff. On the third day a report was given by Dr. Charles C. Duryee, Schenectady, on his work of scoring health activities in cities. This report was followed by a history of influenza epidemics by Dr. Otto R.

Eichel, Albany. A conference was also held between the chief of the bureau of venereal diseases and the members of his staff.

New York City

Harvey Society Lecture.—The fifth lecture of the Harvey Society series will be delivered at the New York Academy of Medicine, at 8:30 p. m., March 15, by Col. F. P. Underhill, on "War Gases."

Medical Inspectors Form Organization.—The medical inspectors of the health department met in the county court house, Manhattan, February 21, and effected temporary organization as a council of the New York Civil Service Society. Dr. Maria M. Vinton, Richmond Hill, was chosen chairman, Dr. Maude Glasgow secretary, and Dr. Theodore A. Lehmann treasurer.

Fund to Perpetuate Dr. Cragin's Follow-Up Work.—In order to perpetuate the work of Dr. Edwin Bradford Cragin in connection with the Sloane Memorial Hospital, an organization has been formed to raise $100,000 for the purpose of enlarging and extending the social service activities of the hospital. Dr. Cragin developed the method of caring for maternity and other patients after they had left the hospital, and made this part of the work possible largely through his own contributions, augmented by gifts from grateful patients. The endowment fund which it is now proposed to raise is in the hands of Henry K. McHarg, at 40 Wall Street.

Personal.—Dr. Stephen Smith, for thirty years a member of the state board of charities, celebrated his ninty-sixth birthday anniversary, February 19.——Dr. Herman Seidler, Brooklyn, who pleaded guilty to a charge of speeding, January 31, was fined $100 and sentenced to ten days in jail, was granted his freedom, February 3, and released on a bail bond of $250, pending an appeal of his case to the county court.——Lieut.-Col. Walter C. Montgomery, surgeon of the Twenty-Seventh Division, formerly the New York National Guard, and Lieut. Lee A. Hadley, Syracuse, have received divisional citations for meritorious conduct during engagements in Belgium and France.——Dr. James Alexander Miller has had conferred on him by the French government the decoration of a Chevalier of the Legion of Honor in recognition of his service in connection with the campaign against tuberculosis conducted by the Red Cross and the Rockefeller Foundation.——Dr. John A. Ferguson of Brooklyn has been appointed medical examiner with the municipal civil service commission.

Opposition to Health Insurance Bill.—At the meeting of the Medical Society of the County of New York, February 24, the committee on health insurance, after having conferred with both professional and lay persons interested in the subject, offered a number of amendments to the Donohue bill for the consideration of the society, but in doing so declared that it was to be distinctly understood that it in no wise committed itself either in favor of the Donohue bill or of the scheme of compulsory health insurance as a whole. It simply presented these amendments to the bill in order that if some such bill was enacted into law the interests of the medical profession might be properly safeguarded. The society adopted these amendments but made it clear that it had not withdrawn its condemnation of compulsory health insurance as a whole.——On the same evening the physicians, dentists and pharmacists of Brooklyn, at a mass meeting of the various societies held under the auspices of the Kings County Medical Society, passed resolutions unanimously opposing the Donohue bill.——The Bronx County Medical Society has also gone on record as strongly opposed to the measure.

OHIO

Arrested on Drug Charge.—Dr. Moritz Lowenthal and H. L. Treat, managers of the Rest Cure Sanitarium, Cleveland, are said to have been arraigned before United States Commissioner McGuire, February 13, on a charge of illegally possessing morphin. Federal agents are said to have raided the sanatorium and confiscated narcotics valued at $30,000.

State Society Meeting.—The seventy-second annual meeting of the Ohio State Medical Association is to be held in Columbus, May 6, 7 and 8. The forthcoming convention is expected to be the largest in point of attendance and interest in the history of the Ohio state association. A number of committees are already at work in planning the program. Among the interesting features which are being planned in connection with the exhibition will be scientific exhibits by the state department of health, the Ohio Board of Administration, the Ohio School for the Blind, and the National Society for the Control of Cancer.

Personal.—Dr. Oscar H. Sellenings, who was appointed health officer of Columbus, February 15, was removed after a brief tenure of office, February 19, when it was ascertained that he was violating the state health law by serving as health officer while still a member of the state board.——Dr. William L. Dick, Columbus, is serving as health officer until a successor to Dr. Louis Kahn is elected.——Dr. Charles W. Hedrick, Willard, is reported to be seriously ill with septicemia.——Dr. Charles P. King, Columbus, was stricken with cerebral hemorrhage, February 11.

Tuberculosis Instruction to Physicians and Nurses.—The Ohio State Sanatorium, Mount Vernon, announces that courses of instruction will be conducted at the sanatorium in June, and that physicians and visiting district public health and tuberculosis nurses will be given the benefit of the results obtained at the institution, and this without expense. June 9 to 14 will be devoted to special lectures and courses of instruction to nurses on the subject of public nursing as it effects the tuberculosis situation in Ohio, and the two weeks following, from June 16 to 28, will be open to the medical fraternity for special instruction courses that will embrace twenty lectures, taking in every phase in the history and treatment of the disease. In addition to the regular staff of nurses and physicians at the sanatorium, a number of specialists will assist. Dr. Stephen A. Douglass, superintendent of the sanatorium, has just returned from Italy, where he has been for six months as a member of the American Red Cross Commission, and during his absence Dr. Jay D. Thomas has been medical superintendent. The staff of the sanatorium also includes Drs. Louis Mark and Frank M. McCafferty.

PENNSYLVANIA

Conference of Industrial Physicians.—The eighth conference of Industrial Physicians and Surgeons, held under the direction of the Pennsylvania Department of Labor and Industry, will convene at the William Penn Hotel, Pittsburgh, March 14. The chief topics of discussion are: "Traumatic Hernia and the Compensation Board"; "How the Industrial Physicians and Our State Department of Health Can Best Cooperate"; "Carbon Monoxid Poisoning—Its Prevention and Treatment"; "Sprained Back and Flatfoot"; "Health Hazards in the Manufacture of Dyestuffs"; "How the Industrial Physicians Can Help in the Campaign Against Venereal Disease," and "Health Insurance, Its Disadvantages and Advantages."

Personal.—Dr. Howard L. Hull of Camp Hill, Cumberland County, medical officer of the U. S. Army, has been appointed chief medical inspector of the state department of health.——Joel T. Boone, Lieutenant-Colonel, M. C., U. S. Army, Pottsville, regimental surgeon to the Sixth Marines, who received the distinguished service cross with two additional bars for citations, has returned to his home.——Dr. John N. Sprowles, Claysville, second vice president of the Medical Society of the State of Pennsylvania, was seriously injured, February 21, when his automobile went over an embankment near Taylorstown, sustaining a fracture of the left hip and laceration of the left knee, and is under treatment at the City Hospital, Washington.——Dr. Torrance John Hanlon, Captain, M. C., U. S. Army, Donora, who was decorated by King George of England in December last, for conspicuous bravery, has returned to the United States and is on duty at a government hospital near Pittsburgh.——Dr. Sidney A. Slater has resigned as superintendent of the Grand View Sanatorium, Oil City, to become superintendent of the Southwestern Minnesota Sanatorium, Worthington, Minn. This sanatorium was established by the counties of Rock, Pipestone, Lyon, Lincoln, Murray, Cottonwood, Nobles and Jackson.

Philadelphia

Rush Memorial.—A plan to preserve the homestead of Berry Rush at Byberry as a medical museum in memory of the early Philadelphia surgeon has been advanced by Mrs. C. D. Joyce, owner of the property. The old house is still standing and is near the city farms at Byberry.

Laboratory Chartered.—Judge Staake has chartered the dermatologic research laboratories which were formed in November, 1912, for the prime purpose of discovering psoriasis. The membership of the associates working in this laboratory includes Dr. J. Chamberg, Dr. F. J. Colmer, Dr. David Riesman and Dr. Albert D. Ferguson.

Officers Elected.—At the stated meeting of the Philadelphia Genito-Urinary Society, February 24, the following officers were elected for the ensuing year: president, Dr. Benjamin A. Thomas; vice president, Dr. A. Haines Lippincott; secretary-treasurer, Dr. William H. MacKinney, and chairman executive committee, Dr. Charles S. Hirsch.

City Physicians' Strike Off.—Forty-seven of the city's assistant school inspectors, who demanded an increase in salary from $600 to $1,000 a year, have withdrawn their demands. There are 220,000 schoolchildren in the city, and the work of these physicians consists not alone in protecting children from disease, but also in improving the health of those who are poorly nourished and in continuing the education of the crippled and tuberculous. A clinic is maintained for the examination of those mentally deficient. Truant children are visited to determine their physical fitness. The report of the work shows that sixty-four physicians and forty-one nurses last year made 147,631 examinations and discovered 143,172 physical defects and diseases.

Personal.—Joseph Sailer, Lieutenant-Colonel, M. C., U. S. Army, and Benjamin F. Baer, Charles F. Nassau, and Albert P. Francine, Majors, M. C., U. S. Army, have returned to this country.——Dr. Jacob S. Cohen, for many years professor of electrotherapeutics in the Jefferson Medical College, was 81 years old, February 27.——Lieut. Andrew Knox, M. R. C., has received the English military cross for gallantry in the field under heavy machine gun fire.——Dr. S. Leon Gans of Philadelphia, surgeon in the Spanish War, and a captain in the Army, has been named chief of the genito-urinary dispensaries of the state department of health.——Dr. Samuel Friedenberg has been appointed assistant medical inspector of the bureau of health.——Drs. Howard S. Mace, D. J. Gallaher and M. Chapiero have been appointed assistant medical school inspectors.——Dr. William Campbell Posey, for twenty-five years attending physician at Wills Hospital, has been elected as consulting physician to the hospital.——Dr. Thomas E. Conard has been appointed acting attending surgeon to the institution.——Dr. Luther C. Peter has been elected professor of ophthalmology in the Graduate School of the University of Pennsylvania.——Dr. William Williams Keen had conferred on him the honorary degree of Doctor of Laws by the University of Pennsylvania, university day. In conferring the degree, Provost Smith paid the following tribute to Dr. Keen:

> "William Williams Keen, voluminous writer on medical subjects, especially surgery, in which you have an international reputation.
>
> "Corresponding member of learned societies in England, Scotland, Belgium, France and Italy.
>
> "Honored at home and abroad by ancient universities with their highest degrees. Author of meritorious historical documents. Active participant in all social movements of an uplifting nature, sturdy patriot. Only commissioned officer in the present war who was a comsioned officer during the Civil War. Beloved teacher, honored citizen, I confer upon you the degree of doctor of laws.

RHODE ISLAND

Program of Public Health Work.—Gov. R. Livingston Beekmann has recently given public health work in Rhode Island a great impetus by becoming personally responsible for a large program. In October he called Dr. Lydia Allen DeVilbiss, Topeka, director of the division of child hygiene, Kansas State Board of Health, to make a study of the health conditions as related to the children of Rhode Island, and to formulate a program for child welfare. As a result of this investigation and report, bills have been introduced into the legislature creating a division of child hygiene and a division of vital statistics in the state board of health; a director of health and physical training of the state normal school who shall be ex-officio state director of medical inspection in the schools; and removing some of the existing disabilities of the school attendance law and strengthening the present child labor legislation.

VIRGINIA

Personal.—The residence and office of Dr. Robert A. Warren, Hot Springs, including the Midway Inn, which was owned by the family, were destroyed by fire, February 22, with a loss of $50,000.——Dr. W. D. Sydnor, Hamilton, is under treatment in the Loudoun Hospital awaiting operation for chronic appendicitis.

CANADA

Hospital News.—Twenty-three of the leading physicians of Calgary, Alta., have issued a statement giving their hearty approval to the municipal hospitals scheme of that province. They have not been opposed to these hospitals but opposed to political capital being made out of the movement.——A tuberculosis hospital is to be built at Bowness, Alta. The cost is to be $400,000, of which the province will bear $200,000 and the dominion government $200,000.

Osteopathy Still Banned in Quebec.—The osteopaths have not been successful in getting the bill for license to practice in that province passed by the public bills committee of the legislature, but state that they will keep on renewing the fight each year.

Tuberculosis a Serious Menace in Quebec.—The Quebec government has studied the question of tuberculosis in that province and has found that 3,000 die annually. The contract between the provincial and federal governments to provide for the extension of the work of caring for the tuberculous at Ste. Agathe has been ratified by the legislature, and the institution will be used for the next five years solely for soldiers with tuberculosis. The sanatorium was established in 1911 with seventy beds, and has treated 795 patients. It will be extended to 271 beds.

Personal.—Major Frederick N. G. Starr has returned from overseas to Toronto.——Col. Herbert A. Bruce is returning to Toronto from overseas after several years' service, and is bringing with him an English bride.——Capt. Charles G. Cox, Humboldt, Sask., has been permanently attached to the local board of pension commissioners as medical examiner.——Dr. Andrew Croll, who has been overseas some years, has resumed practice in Saskatoon. Latterly he has been chief surgeon at Camp Hill Military Hospital, Halifax, N. S.——The Order of Companions of St. Michael and St. George has been conferred on the following members of the Canadian Army Medical Corps: Cols. Hugh Chisholm; Spurgeon Campbell, Winnipeg, Mann.; John Kidd; William Simpson, and Robert P. Wright, Quebec; and the order of Commanders of the Order of the British Empire on Cols. George D. Farmer, Ancaster, Ont., and John Stewart, Halifax, N. S.——Dr. Mowat has reached his home in Ottawa, Ont., having returned from overseas where he had been for some time a prisoner in Germany.——Dr. Thomas A. Carson, Orangeville, Ont., who has been in France, has returned and been appointed on the pension board, Ottawa.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

Marquette Medical School Dispensary, $133,000 as an endowment by the family of Patrick Cudahy.

Johns Hopkins Hospital, Baltimore, $400,000 for the erection of a building to serve as a women's clinic by an anonymous donor.

Johns Hopkins University, Baltimore, the "Tudor and Stewart Club" in memory of Revere Osler, endowed by Sir William and Lady Osler.

Personal.—At the French General Headquarters, January 10, the Croix de Guerre with gold star was conferred on Percy L. Jones, Col., M. C., U. S. Army, chief of the American Sanitary Section of the French army.——Major-General and Mrs. Merritte W. Ireland entertained at dinner thirty guests recently, in honor of Victor C. Vaughan, Col., M. C., U. S. Army, Ann Arbor, Mich., and Mrs. Vaughan.

Appropriations for Hospitals.—February 21, the following appropriations were made for hospitals for returning soldiers and sailors: for the establishment of a hospital in Cook County (Speedway Hospital), $3,000,000; for the establishment of a hospital at Dawson Springs, Ky., $1,500,000; for the establishment of a hospital, at Norfolk, Va., $900,000; for the establishment of a hospital in the District of Columbia, $500,000; for improvements in operations on the hospital at Stapleton, Staten Island, N. Y., $190,000.

Tri-State Election.—At the annual meeting of the Tri-State Medical Association of Virginia and the Carolinas, held at Richmond, Va., February 19, under the presidency of Robert S. Cathcart, Major, M. C., U. S. Army, Charleston, S. C., the following officers were elected: president, Dr. Robert C. Bryan, Richmond; vice presidents, Drs. Clifton M. Miller, Richmond; Andrew J. Crowell, Charlotte, N. C., and Augustus R. Taft, Charleston, S. C., and secretary-treasurer, Dr. Rolfe E. Hughes, Laurens, S. C. The association will hold its next meeting at Winston-Salem, N. C.

Joint Influenza Committee.—It was announced, February 20, that a joint influenza committee has been created by the Surgeon-Generals of the Public Health Service, the Army and the Navy, and the director of the census, to study the epidemic of influenza and to make comparable the influenza data gathered by the government departments. The committee consists of Dr. William H. Davis, Washington, D. C., chairman, and Mr. C. H. Sloane of the Census Bureau; Dr.

Wade H. Frost, Washington, D. C., and Mr. Edward Sydenstricker, of the Public Health Service; Col. Deane C. Howard, Col. Frederick F. Russell and Lieut.-Col. Albert G. Love of the Army, and Lieut.-Com. Joseph R. Phelps and Surg. Carroll Fox of the Navy.

Aspirin and Espionage.—In an address in Philadelphia, March 1, according to the Philadelphia *Public Ledger*, Mr. A. Mitchell Palmer, made some "startling disclosures of the extent to which German capital operated in this country with purposes hostile to America." The *Ledger* says in part:

> Mr. Palmer told how when the Bayer Aspirin Company was seized in New York twenty-three trunks were found in the cellar of the building. Officials of the company explained that these trunks contained clothing belonging to employes and when they were opened they were found to contain the papers of almost the entire workings of the *Bernstorff* system of espionage.

Public Health Education Campaign.—A nation-wide campaign for public health education is one of the first of the peace time activities to be undertaken by the Red Cross, and plans for this are well under way. Realizing that the Chautauqua itineraries offered unusual opportunities to reach communities most in need of health work, the Red Cross Department of Nursing is assigning between thirty and forty of its most able nurses, who have just returned from overseas, to lecture on the principal Chautauqua circuits throughout the country. The lectures are to start about June 1. In each instance the lecture will be followed by a squad of other nurses and Red Cross workers, who will conduct a health exhibit and give practical demonstrations.

Influenza.—According to *Public Health Reports*, February 21, with local variations the number of cases of influenza reported has declined since about the middle of January in all parts of the country from which reports have been received. Reports to the service for the week ended February 15 indicate a general decline in the number of cases. As compared with the previous week, fewer cases were reported in Alabama, California, Connecticut, Florida, Illinois, Iowa, Kansas, Louisiana, Maine, New Jersey, North Carolina, Ohio, Oklahoma and Virginia. Arkansas and Vermont reported increases, but the number of cases was not large. Reports from the extracantonment zones indicate a slightly smaller number of cases than for the previous week.

Country Districted for Social Hygiene Board.—For purposes of administration, the Interdepartmental Social Hygiene Board has established districts as follows, each district being in immediate charge of a supervisor:

District 1.—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.
District 2.—New York, New Jersey, Pennsylvania, Delaware.
District 3.—Maryland, District of Columbia, Virginia, West Virginia.
District 4.—Tennessee (Eastern), North Carolina, South Carolina, Georgia, Florida (Eastern).
District 5.—Florida (Western), Alabama, Mississippi, Louisiana, Tennessee (Western), Arkansas.
District 6.—Texas, Oklahoma, New Mexico.
District 7.—Arizona, California, Oregon, Washington.
District 8.—Utah, Nevada, Idaho, Montana, Colorado, Wyoming.
District 9.—North Dakota, South Dakota, Nebraska, Kansas, Missouri, Illinois, Iowa, Wisconsin, Minnesota.
District 10.—Michigan, Indiana, Ohio, Kentucky.

Welcome to the Spanish Edition of The Journal.—The *Gaceta Medica de Caracas* of Nov. 30, 1918, reproduces the official announcement of the publication of the Spanish edition of THE JOURNAL, and comments as follows: "We publish the letter which follows in order to let our colleagues of Venezuela know of the praiseworthy undertaking of the American Medical Association to issue an edition in Spanish of their interesting periodical, which under a thousand titles will be of true usefulness by its extensive, selected and varied reading matter. We hope that the Venezuela medical profession will give it decided support." Elsewhere in the same issue the *Gaceta* publishes an address by Dr. O. Montoro at a meeting of the Association of the Medical Press of Cuba. His subject was professional ethics. He emphasized that the press in general should feel called to improve customs in vogue if by doing so the progress and the happiness of the country would be promoted. "The medical press in particular has the obligation to watch out for the purity and the dignity of the profession, hundredfold worthier and nobler than those who are striving to corrupt it. We all of us know the organ of the American Medical Association. THE JOURNAL has been carrying on for a long time a campaign from which it has not been diverted by the powerful interests which attack it or by any influences, but continues its campaign to improve the professional morality among American physicians and sweep the market clear of many proprietaries which, as the least of the harm they do, defraud the patient. No one conscious of his duty can fail to realize the great influence which these campaigns have had on the moralization of a people and of a social class. And all this the American medical press realizes by means of its powerful Association and its admirable and well known organ, THE JOURNAL."

New Child Labor Law.—The new child labor law, passed by Congress, *in effect prohibits the* employment of children under 14 in factories, and of children under 16 in mines and quarries, insures a maximum eight-hour day, and prohibits night work for children between 14 and 16 employed in factories. As pointed out by the Children's Bureau, however, the number of children employed in the designated occupations is comparatively small, and even after the law is in force young children will be able to work at some time, in some occupations, in practically every state in the Union, and in many states boys and girls will be permitted to work long hours. The children not covered and protected by the Child Labor Law will have only such protection as is afforded by the varying laws of the states in which they live. Thus, while California, Michigan, South Dakota, Texas, Montana and Ohio fix the minimum age higher than 14, all except Ohio have exemptions from the law. New Mexico, Utah and Wyoming have no minimum age law except for children in certain dangerous or injurious occupations. North Carolina and Mississippi have a minimum age restriction less than 14, and many of the thirty-eight states, including the District of Columbia, have 14 as the minimum age, but grant exemptions allowing children under 14 to work in certain occupations, or during vacation, out of school hours, in case of poverty, or under other specified conditions. Seventeen states permit the employment of children under 16 for more than eight hours a day and forty-eight hours a week; two states place no limit on hours of work; thirty which have an eight-hour day do not cover all occupations and have certain exemptions; seven states do not forbid night work, while others prohibit it in certain occupations. The bureau calls attention to the fact that most states fail to protect children in agriculture and domestic service.

Board for Ophthalmic Examinations.—The American Board for Ophthalmic Examinations will hold its next examination at the Wills Eye Hospital, *Philadelphia, June 6 and* 7, 1919. This examination will be the fifth to be conducted by the board, which is composed of representatives of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-Laryngology. For a certificate of this board, the examination in ophthalmology consists of case records; written examination, and clinical laboratory and oral examinations, or so much thereof as may be judged necessary. Candidates in ophthalmology are required to submit twenty-five complete case records, of which not more than ten should be descriptive of operations. These records should be of cases of ocular diseases and defects of varied character, including errors of refraction or muscle balance, and external ocular diseases or diseases of the uveal tract or retina, or of the optic nerve, or glaucoma. The reports should show especially the reasons for the diagnosis, and for the operative treatment and the technic of operations in operative cases. The written examination will test the candidate's knowledge of the underlying principles of the science of ophthalmology, including anatomy, embryology, physiology, physiologic optics, pathology, relations of the eye to the other organs and diseases of the body. The oral examination will include: the external examination of the eye; ophthalmoscopy (candidates are requested to bring their own ophthalmoscopes); measurements of errors of refraction; testing of the ocular movements and fields of vision; relations of ocular conditions to diseases of other parts of the body and their treatment, and laboratory examination in histology, pathology and bacteriology of the eye. Further information may be had on request from the secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

FOREIGN

Deaths from Plague.—February 18, it was reported from Buenos Aires that in the *seven* preceding days there had been three deaths from bubonic plague.

Influenza Increases.—During February there was reported to have been a great increase in cases of influenza in Paris.

For the first three weeks in February, deaths from this disease were 284, 370 and 550.

War Hospital Closed.—The American Red Cross Hospital at Neuilly, organized in the first week of September, 1914, by a prominent American, and one of the most conspicuous establishments in caring for the wounded during the war, was closed, February 6.

Mission to Roumania Leaves Constantinople.—The American Red Cross Mission, which is headed by Dr. H. Gideon Wells, Chicago, consisting of forty-nine members, left Constantinople for Constanza, February 16, with 4,000 tons of relief supplies. These supplies were supplementing three boatloads of foodstuffs already sent to Roumania by the American Food Administration. The American Red Cross has 10,000 tons of additional foodstuffs, medicine and clothing on the way to Roumania.

Typhus Fever in Moscow.—Advices to the state department of Helsingfors state that twenty French physicians, twelve British, seven Belgian, five Italians and one American comprise a party of war relief workers that has returned from Moscow to Stockholm. They reported that there are 1,000 cases of typhus fever in Moscow, weekly, that hospitals are unable to take care of patients, many having to lie in halls without beds, and that the personnel of hospitals are largely incapacitated because of illness.

Proposed Merging of Danish Medical Societies.—Professor Rovsing of the University of Copenhagen, editor in chief of the *Hospitalstidende*, has offered this weekly as the organ of the united medical societies, urging that the medical societies of Denmark merge to form a single association. The Copenhagen Medical Society held a special meeting in November at which the plan was adopted, with forty-two ayes to two noes, that the Danish medical societies merge to form one Danish medical society, and to select the *Hospitalstidende* as its organ. The Alm. Danske Lægeforening has its own journal, the *Ugeskrift for Læger*. Both of these weeklies are regularly indexed in the Current Literature Department.

Red Cross Hospital Closed.—The American wounded in England are being evacuated to the United States so rapidly that it has been possible to close a number of the hospitals. American Red Cross Hospital No. 23 (St. Katherine's Lodge) has already been closed, and among the others that will soon be closed are American Red Cross Convalescent Hospital for Officers, at Lingfield Surrey, American Red Cross Hospital No. 21 at Paignton, North Devon, and army hospitals built by the American Red Cross at Romsey, Hursley and larger base hospitals at Portsmouth, Dartmouth and Tottenham. Sarisbury Court, Southampton, and two military hospitals at Liverpool will be the only American hospitals in Great Britain to be conducted through the winter.

Deaths in the Profession Abroad.—**Dr. Alois Epstein,** professor of children's diseases at the German University of Prague and chief of the children's clinic and foundlings' asylum.——**Dr. L. Stieda,** formerly professor of anatomy in turn at the universities of Dorpat, Königsberg and Giessen, aged 81.——**Dr. W. Anton,** professor of otorhinology at the German University of Prague, aged 58.——**Dr. Galcerán Granés,** professor of nervous and mental diseases at the University of Barcelona, and member of the editorial staff of the *Gaceta Medica Catalana*.——**Dr. S. M. Palomino,** subdelegado de medicina at Madrid, and editor of the *Monitor Sanitario*.——**Dr. V. Cervello,** professor of materia medica at the University of Palermo, noted for his work on the paraldehyds, adonis and iron, and founder of the *Archivio di Farmacologia e Terapeutica,* aged 64.

SOUTH AND CENTRAL AMERICA AND WEST INDIES

New Chief of Public Health Service in Venezuela.—Dr. L. G. Chacin Itriago of Caracas has recently been appointed director of the Oficina de Sanidad Nacional of Venezuela.

Death of Professor Pereira.—Dr. Miguel Pereira, professor of clinical medicine at the University of Rio de Janeiro; in 1910 president of the Academia Nacional de Medicina; leader in the Saneamento do Brazil movement, and author of numerous works on internal pathology and clinical medicine, died recently after a long illness, aged 47. Nearly the whole issue of the *Brazil Medico* for December 28 is devoted to obituary notices and tributes to Dr. Pereira spoken in the senate, the chamber of deputies and at the inauguration of the new building of the local medical society, which was deprived of all festival character by the loss of this prominent member.

MEXICO LETTER

MEXICO CITY, Feb. 16, 1919.

Interchange of Professors and Students

The Associated Press has given out word that the arrangements have been concluded for the establishment of the interchange of professors and students between the University of Washington and the University of Mexico. Special attention is to be paid to the study of the language, history and evolution of the two countries for the purpose of stimulating mutual acquaintance and cultivating friendly relations between the two nations.

Effects of Alcohol

On a single day recently sixteen persons were sent to the public insane asylum, the Manicomio General, affected with mental derangement of different kinds, all of which were attributed to the abuse of alcohol. The horrifying feature of the event was that all of them were youths, none having reached the age of majority, and the youngest was only 12 years old.

Personal

Sr. E. L. Vallejo, a veterinary physician, has recently been elected a member of the Sociedad Mexicana de Geografia y Estadistica, one of the oldest scientific bodies of the country. His address on being received a member was entitled, "Historical and Geographic Data on Anthrax and Its Preventive Vaccine in the Republic of Mexico."

Prosecution of a Quack

In the city of Guadalajara, Jalisco, a man has been apprehended—and it is the first time this has occurred, to my knowledge—for practicing medicine without having conformed to the legal requirements. The name of the accused is Felipe Ochoa. A petition was presented to the legislature of the state of San Luis, signed by a number of professional men, urging the passage of a law to regulate the practice of the liberal professions, and to exclude the unqualified from practice. The legislature to date has not taken any steps to remedy the grave evil of allowing charlatans to practice unmolested, an evil which affects nearly the entire country.

The Wassermann Reaction

For some unexplained reason, the aim and purpose have been missed of the new ordinance compelling the production of a certificate of health as an indispensable prerequisite to marriage, the certificate to be based on the negative findings of the Wassermann test. At present, the candidate has only to present a certificate based solely on the clinical findings, which is far from being an efficient guarantee of safety. Some of the sensational periodicals undertook a campaign against this beneficent ordinance and published articles inspired by physicians either unscrupulous or behind the times in which they sought to convince the general public that the Wassermann reaction has absolutely no diagnostic value.

LONDON LETTER

LONDON, Feb. 5, 1919.

Treatment of Disabled Soldiers

A scheme for the treatment of disabled soldiers has been drawn up by Sir John Collie, director of the medical service to the ministry of pensions. All the types of cases have already been dealt with at an earlier stage by the army medical service, which has equipped and staffed special hospitals and originated special teams of research workers. At the present rate of demobilization, ample room exists in the military hospitals for pensioners. Consequently the ministry of pensions will not embark on a scheme of separate hospitals—which, indeed, it could not staff at this moment. It has been the policy of the ministry of pensions to work as a civil rather than as a military organization. The discharged disabled soldier resents military discipline, and cannot feel the same confidence in a body presided over by military men as in a body presided over by civilians. To overcome this difficulty it is proposed to appoint a liaison officer to the pensions ministry to work between the director-general of the army medical services and the director of medical services of the ministry of pensions. As the military hospitals are demobilized they can be taken over by the ministry of pensions. But there must be continuity of treatment. The war has provided a medicine and surgery of its own, and physicians in large numbers have been trained in new methods. Orthopedic methods are now universally looked on as necessary to the proper handling of disablement.

The army possesses splendidly equipped orthopedic hospitals and workshops, and practically controls the physicians and nurses qualified to undertake this work. These physicians and nurses should become in time the staff of the ministry of pensions so that the work can be carried on into civil life. In the same way diseases like malaria, dysentery and trench fever have been specially provided for, specially studied and specially controlled. Teams of workers have learned how to recognize these diseases, how to prevent their spread, and how to treat them. The civilian medical profession as a whole knows little or nothing about them. These teams and their special hospitals must gradually be taken over as going concerns by the ministry, as much in the interests of the civil population—to prevent the spread of infection—as of the men themselves.

The Treatment of Dysentery in the Army

There are a large number of cases of dysentery in the military hospitals in this country contracted on service in the eastern theaters of war. For their treatment and the prevention of the spread of the disease to the civilian population an important army council instruction has just been issued. It provides in the fullest possible way for the care of the dysentery cases. It orders that "all patients suffering or convalescent from dysentery will, if fit to travel, be sent to one of the selected dysentery hospitals, where they will be examined, treated, and disposed of." These special hospitals must have on their staffs a bacteriologist and a protozoologist, and the cases are to be in charge of medical officers specially selected for their experience in or aptitude for the work, and as few changes as possible are to be made in these appointments. On admission of a patient to a selected hospital, steps will be taken at once to verify the diagnosis of dysentery and to exclude the possibility of the man being a carrier of the disease. A standing medical board is to be appointed at the Central Dysentery Hospital (Addington Park Military Hospital), one of the members of which shall belong to the laboratory staff of the hospital. The duty of this board is to make periodic examinations of all carriers and of such severe or relapsing cases as may have been transferred to the central hospital from the other special hospitals. Every "healthy" or "uncured" amebic carrier who elects to be discharged while still a carrier will be required to sign a paper stating that his condition has been explained to him and that he has been offered and has refused a course of specific treatment. The high percentage of recoveries after specific treatment properly administered will be explained to each man. On the discharge from any hospital of an uncured or chronic case of dysentery (amebic or bacillary) or any bacillary carrier, a notification shall be sent on or shortly before the date of discharge to the medical officer of the local government board. This note shall give the man's name, his age, address, date and place of original attack of dysentery, and history of relapses, summary of bacillary and protozoologic findings, with dates and note as to emetin or other specific treatment received.

German Brutality to a Prisoner

A coroner's inquest into the death of Private Robert William Varder of the Northamptonshire Regiment, a repatriated prisoner from Germany, exemplifies the abominable inhuman treatment to which many of our soldiers have been subjected. The father of the deceased gave evidence that his son joined the army in September, 1914, when under age, being 5 feet 11 inches in height and weighing over 11 stone (more than 154 pounds). He was an athlete. When the witness saw him in the Fulham Hospital, January 2, after returning from Germany, he was so emaciated and completely changed that if the sister had not pointed him out he would not have known him. His son had not received any of the many parcels that had been sent to him. He had had no medical treatment, and the only food he had was when they went out and gathered potato peelings, and worm-eaten cabbage leaves, which had been thrown away. No other food was provided for him. The coroner said that Varder had given this account to the army surgeons who attended him in this country: He was taken prisoner by the Germans last April, and was released about the date of the armistice. While at work in a prisoners' camp behind the German line in Belgium, he failed to interpret an order of a German sergeant, who then struck him a fatal blow with the butt end of a rifle. He was very emaciated and was not allowed to go sick. A large abscess formed as the result of the blow. Blood poisoning set in and caused his death. The coroner produced photographs of Varder taken before his capture and since his return from Germany. Formerly he weighed 12 stone (168 pounds), and when repatriated only 4 stone (56 pounds), being practically skin and bone. Capt. A. Leakey, R. A. M. C., of the Fulham General Hospital, gave evidence that when admitted Varder was emaciated and feeble. He had a large abscess on the thigh, which was consistent with his having received a blow. Varder had told him that the abscess was opened without an anesthetic, and a pint and a half of pus removed. The only attention he had afterward was from a soldier. In reply to the coroner's question, Would the operation be a painful process? he said, "Extremely, and from a surgical point of view barbarous." When Varder arrived in England the wound was 10 by 3 inches and was still open. He was too ill for an operation. There would have been nothing serious in the injury if he had been properly treated. The jury returned a verdict that death was due to blood poisoning, following a blow with the butt of a rifle inflicted by a German guard, and that death was accelerated by gross neglect on the part of the German military authorities in not affording him proper nourishment and treatment.

Medical Graduate Course in London

The Interallied Fellowship of Medicine has arranged with the medical schools in London for "an emergency postgraduate" course of three months for qualified physicians belonging to the medical services of the Royal Navy, Army, Air Force, the overseas contingent, the United States and Allies. Officers joining the course will be admitted to the general practice of the hospitals, including the clinical work of the wards and outpatient departments, clinical lectures and demonstrations, postmortem demonstrations and laboratory work. Tickets for the whole course, or for one or two months, are issued at the rate of $17 for each month. They can be obtained from the secretary of the fellowship, 1 Wimpole Street, London, W. I.

PARIS LETTER

Paris, Feb. 6, 1919.

Treatment of Syphilis in the Army During the War

This subject was discussed at a recent meeting of the Société française de dermatologie et de syphiligraphie. Dr. Leredde, chief of the laboratory of the hôpital Saint-Louis, considers the methods of treatment of syphilis advocated by the Service de Santé militaire as being inefficacious. He believes that of the 200,000 to 300,000 persons who contracted syphilis during the war, three fourths remain actively syphilitic and spread the disease. He has discovered many cases of undetected syphilitic chancres, and a large number of persons who even after treatment had a positive Wassermann and who were capable of transmitting the disease.

Dr. Clément Simon protested against exaggerating the figures. In 1916, the army authorities reported 9,000 cases of syphilitic chancres. Multiplying these figures by five gives a total of 45,000 cases reported during the war. Adding to this number the unrecognized and not reported cases, it is safe to say that 90,000 cases may be considered the maximum figure.

Dr. Brocq, who with Dr. Thibierge, was consulted by the undersecretary of state for the Service de Santé militaire in 1915 as to the method of treatment of syphilis to be adopted, advised that it was not so important to give a thorough course of treatment as it was to "blanch" the syphilitics rapidly. Therefore, physicians were advised to use arsenic compounds, such as arsphenamin.

Dr. G. Thibierge was of the opinion that if any syphilitics remained undetected, it was due to the fact that the army surgeons did not make the regulation medical inspections systematically. A patient with a syphilitic chancre should not remain hospitalized more than six weeks. In the American army persons with chancres are not hospitalized. He believes that it was wrong, at the beginning of the war, to hospitalize the gonorrheics.

Health of Lille During the War

At the last meeting of the Académie de médecine, Dr. Calmette, director of the Institut Pasteur de Lille, denounced the acts of cruelty committed by the German army and nation on the inhabitants of Lille. He cited most convincing figures in support of his remarks. In 1915, the mortality rate of Lille was 27 per thousand inhabitants; in 1916 it was 29 per thousand; in 1917, 30 per thousand, and in 1918 it was 41.55 per thousand. The principal causes of this high mortality were tuberculosis, dysentery, scurvy and heart disease. All diseases caused or aggravated by insufficient food rations also increased the mortality rate. Nor is this the only result of these acts. Young boys and girls have not developed normally; hence immediate steps should be taken to remedy these conditions. Calmette addressed an urgent appeal to the authorities to adopt urgent remedial measures at once, distributing substantial food to the children and the young, giving constant medical care, fighting tuberculosis in every possible way, both by notification and by treatment.

Transport of Wounded by Aeroplane

It is interesting to report the first trial of the plan of transporting the wounded by aeroplane. General Paeymirau was recently wounded on the Moroccan front, a shell fragment striking him in the region of the heart. He was transported by aeroplane to Bou-Denib in eastern Morocco on the Algerian front, thus avoiding the shaking to which automobile transportation would have subjected him.

Closing the Netherlands Hospital in Paris

A farewell dinner was tendered to Dr. Van Tienhoven, medical chief of the Netherlands Hospital of Pré-Catelan, and to all his assistants, as well as to the personnel of Auxiliary Hospital No. 77, established in the early months of the war by the Hamburger brothers. In the course of remarks made on that occasion, M. Loudon, formerly minister of foreign affairs for Holland, called attention to the fact that this hospital had cared for 1,658 wounded, with 121,066 hospital days, and that Auxiliary Hospital No. 77 had cared for 1,024 wounded with 46,304 hospital days.

War Welfare Work and Peace Reorganization

The representatives of most of the war welfare agencies recently met at the Musée social under the presidency of M. Leon Bourgeois in order to determine on the activities to be carried on now by these organizations, and to effect a reorganization for that purpose. War victims should receive the aid to which they are entitled and they should never be made to feel that this is a charity or in the nature of alms. A commission was appointed to devise ways and means to make this plan of cooperative action effective.

Society of Friends of the Paris Medical School

A society, called the Amis de la Faculté de médecine de l'Université de Paris, has been formed for the purpose of improving the methods of teaching in the University of Paris, the study facilities for the students, the scientific research laboratories, to favor the expansion of French medicine among foreigners, and to contribute to the advancement of medical science.

Students Celebrate Victory

January 26 an imposing demonstration was held in the Sorbonne by the Association générale des étudiants de Paris in celebration of victory. M. Paul Deschanel, president of the chamber of deputies, presided, assisted by M. L. Lafferre, minister of public instruction. The president of France and Mme Poincaré were present, likewise Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, and Dr. Roger, dean of the Paris faculty of medicine.

Closing the Canadian Hospital at Saint Cloud

On the occasion of the closing of this hospital a banquet was given and a reunion was held at which Dr. Louis Mourier presided, and which was attended by the Canadian delegates to the Peace Conference and the principal notables of the French and the English armies. Dr. Mourier thanked the Canadian doctors for their cooperation and their devotion to the French soldiers. More than 5,000 severely wounded soldiers have been cared for in this hospital as well as a large number of medical patients.

Medical Society of the Grand Duchy of Luxembourg

The Société des Sciences médicales of the Grand Duchy of Luxembourg on Jan. 12, 1919, voted unanimously to go on record as approving the medical studies and medical standards of France. They extended their felicitations to the French medical corps and to their colleagues of Alsace and Lorraine who are natives of the Luxembourg frontier.

Personal

The following persons have been appointed members of the Commission supérieure consultative de santé: Professor Letulle, Paris; Dr. Lagrange, Bordeaux; Dr. Léon Bernard, Paris; Dr. Abadie, Bordeaux; Dr. Crouzon, Paris; Dr. Levassort, secretary-general of the Association des médecins de France, and Dr. F.-V. Helme.

Deaths

Dr. Sabatié, chief physician of the complementary hospital of the Polytechnic School, is dead.

Dr. Henri Chéron, former chief of the obstetric clinic of the Paris medical faculty, died at the age of 50. He was born in Paris, the son of a gynecologist of repute, and had devoted himself particularly to roentgen and radium therapy. He was the founder of the Oeuvre philanthropique du radium, and was charged with the work of giving such treatment to the sick poor. He represented the radiotherapists at numerous French and international congresses.

Dr. H. Bernheim, honorary professor on the Nancy medical faculty, died in Paris. He was the author of a well known work on hypnotism besides many purely medical studies.

Raising the Birth Rate

The senate has concluded its discussion of a proposed law to combat depopulation by the adoption of appropriate measures tending to increase the birth rate. One of the provisions in this law bears on professional secrecy. It reads as follows: Physicians, midwives and pharmacists, who are called as witness in a prosecution for abortion, may, without laying themselves liable to article 378 of the Penal Code (which provides for imprisonment of from one month to six months and a fine of from 100 to 500 francs for revealing secrets which may have been confided to them either professionally or as agents of the state), testify to the facts in the case on trial, providing that they will not bring into the case any person, other than the accused, toward whom they are obliged to maintain professional secrecy. An added amendment exempts from punishment any woman who will make known the abortive maneuvers practiced on her, and who will cause the arrest of the person who performed the abortion. The senate also accepted an amendment providing for imprisonment of from six months to one year of any midwife who has in her possession or who has placed in the home of some one else the instruments used to perform abortion. The senate has adopted this law, but it has not yet been examined by the chamber of deputies.

Health Measures for Liberated Regions

The minister of the interior has appointed a commission, of which Dr. Louis Mourier is the head, to study and apply measures to conserve the health of the population of the liberated regions. Among the members of this commission are: Professors Chantemesse, Marfan, Netter and Widal, members of the Académie de médecine; Drs. Léon Bernard, Méry, Jules Renault and Sergent, physicians of the Paris hospitals; Dr. Roux, director of the Institut Pasteur de Paris, and Dr. Calmette, director of the Institut Pasteur de Lille.

Military Hydrotherapeutic Hospitals

Dr. Molinéry has suggested to the Société de médecine de Paris that the military hydrotherapeutic hospitals be reorganized, providing for laboratory, surgical and physiotherapeutic departments. He also suggested the appointment of a medical commission, consisting of outside physicians, by whom patients will be examined so that the proper hydrotherapeutic treatment can be outlined.

Marriages

William Howard Michael, Lieut.-Com., P. A. Surg., U. S. Navy, Washington, D. C., to Mlle. Marcelle Mortier of Neuf Chateau, Vosges, France, at Rouceaux, France, in January.

Bennet Roland Parker, Lieut., M. C., U. S. Army, Chicago, on duty at Nantes, France, to Miss Edith Helene Matthies, at Nantes, January 27.

George Elkington Moore, Asst. Surg., Lieut. (j. g.), U. S. N. R. F., Madison, Wis., to Miss Louise M. Kroll of Brooklyn, February 12.

John Martin Whalen, Lieut., M. C., U. S. Navy, Grand Rapids, Mich., to Miss Arline Turpell, at Washington, D. C., February 4.

George Francis Brackett to Miss Elizabeth Evelyn Cain, both of San Francisco, in Sacramento, Calif., February 15.

Wallace Krugler to Miss Blanche Edith Ehrlich, both of New York City, February 11.

Edward Benedict Malloy to Miss Sadie Steinmetz, both of Akron, Ohio, February 25.

Deaths

James Tyson ⊕ Philadelphia; University of Pennsylvania, Philadelphia, 1863; aged 77; professor of pathology and morbid anatomy in his alma mater from 1876 to 1889; secretary of the medical faculty from 1877 to 1888, and dean from 1888 to 1892; professor of practice of medicine from 1899 to 1910; and since that time emeritus professor; president of the Medical Society of the State of Pennsylvania in 1911; president of the Association of American Physicians in 1907-1908; and of the College of Physicians of Philadelphia from 1907 to 1910; author of numerous monographs and textbooks, the most notable of which are those on "Practical Examination of Urine," "Physical Diagnosis," and "Textbook of Practice of Medicine"; at one time assistant editor of the *Philadelphia Medical Times;* pathologist to the Philadelphia General Hospital from 1870 to 1872; visiting physician since 1872; and president of the medical board from 1886 to 1890; consulting physician to the Kensington Hospital for Women; one of the incorporators, a trustee and chairman of the executive committee of the Rush Hospital for Consumption and Allied Diseases; acting assistant surgeon, U. S. Army, during the Civil War; died at his home, February 21.

Clarence Ewen ⊕ **Major, M. C., U. S. Army** (retired), Washington, D. C.; Bellevue Hospital Medical College, 1862; aged 75; assistant surgeon of the 53d New York State Volunteers in 1862; assistant surgeon of the 102d United States Volunteers in 1862 and 1863; acting assistant surgeon, United States Army, 1864; assistant surgeon of the 29th United States colored troops in 1864 and 1865; acting assistant surgeon, United States Army, in 1868; who entered the regular establishment as lieutenant and assistant surgeon in 1868, was made captain in 1869, promoted to major in 1889, and was retired at his own request after more than thirty years' service, Jan. 26, 1897; died at his home, January 6.

James Madison Gora Carter ⊕ Los Angeles; Northwestern University Medical School, Chicago, 1880; aged 75; formerly of Chicago and Waukegan, Ill.; president of the Illinois State Medical Society in 1897 and 1898; a veteran of the Civil War, and a prisoner in Libby prison; professor of pathology and hygiene from 1891 to 1895; professor of clinical and preventive medicine from 1895 to 1899, and professor emeritus since 1900, in the College of Physicians and Surgeons, Chicago; a member of the American Academy of Political and Social Science, and the American Historical Association; died at his home in Los Angeles, March 3.

Leonard Michael Kalaher ⊕ **Lieut., M. C., U. S. Army,** Jersey City, N. J.; Fordham University, New York City, 1915; aged 27; who at his entrance into the service served at Fort Oglethorpe, Ga., and then after courses of instruction at Bellevue Hospital and the Rockefeller Institute, New York City, was sent to Camp Greene, N. C., and later to the base hospital at Fort McHenry, Md., and overseas to serve with the American Expeditionary Forces; died at U. S. Base Hospital No. 78, Toul, France, February 5, from pneumonia.

John James Mott, Statesville, N. C.; Jefferson Medical College, 1866; aged 84; a member of the legislature in Catawba County in 1866 and 1867; president of the Western North Carolina Railroad from 1868 to 1872; collector of internal revenue for the sixth district of North Carolina from 1872 to 1882; for several years president of the Statesville Air Line Railway Company, and since 1912 president of the Radford (Va.) Water Power Company; died at Radford, January 28, from disease of the heart and bladder.

William Frederick Mittendorf ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1873; aged 74; a specialist in ophthalmology; a member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society and New York Academy of Medicine; consulting ophthalmologist to St. Mark's Hospital, and ophthalmic surgeon to the Nursery and Child Hospital, New York City; died at his country home in Crugers, N. Y., February 14.

Mary E. Walker, Oswego, N. Y.; Syracuse (N. Y.) Medical College, 1855; aged 86; lieutenant and assistant surgeon, U. S. Army, during the Civil War; awarded the Congressional medal of Honor for "bravery and valuable services in the field." noted as a dress reformer and advocate of equal suffrage; died at Bunker Hill, near Oswego, February 21.

Samuel G. Stewart, Topeka, Kan.; Starling Medical College, Columbus, Ohio, 1873; aged 73; a member of the Kansas Medical Society; chief of the medical staff of Christ Hospital, Topeka; consulting physician to the Topeka State Hospital; professor of principles and practice of medicine and clinical medicine in Kansas Medical College, Topeka; died at his winter home in St. Cloud, Fla., February 7.

Richard E. Hinman, Atlanta, Ga.; New York Homeopathic Medical College, 1889; aged 69; a member of the Medical Association of Georgia; a member of the faculty of the Atlanta Southern Dental College; for several years associate secretary and treasurer of the homeopathic board of the State Medical Examining Board of the State of Georgia; died at his home, February 10, from pneumonia.

Pierson Constantine Cope ⊕ Braddock, Pa.; University of Pittsburgh, 1890; aged 58; a member of the staff of the Braddock General Hospital; died at his home, February 25, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent over impaired health after an attack of influenza and a cerebral hemorrhage.

Henry Reuben Weston ⊕ **Lieut., M. C., U. S. Army;** University and Bellevue Hospital Medical College, 1903; aged 40; a member of the Association of Military Surgeons of the United States; who entered the Medical Reserve Corps in 1908, and had two tours of duty in the Philippine Islands; died, November 27, from gangrene of the lungs.

Alfred C. Goudy, Beach City, Ohio; Sterling Medical College, Columbus, Ohio, 1882; aged 58; for eighteen years a member and for several years president of the board of directors of the Stark County workhouse; local surgeon for the Baltimore and Ohio System; died at his home, February 9, from acute dilatation of the heart.

David Halsey Parliament ⊕ **Lieut., M. C., U. S. Army,** Covington, Ga.; Georgia College of Eclectic Medicine, Atlanta, 1911; Atlanta (Ga.) School of Medicine, 1913; aged 35; professor of chemistry and urinalysis in the Georgia College of Eclectic Medicine, Atlanta; died at Camp Dix, N. J., October 2, from pneumonia.

Leo Cassius Miller ⊕ **Lieut., M. C., U. S. Army,** Champaign, Ill.; University of Illinois, Chicago, 1906; aged 36; who served at Camp Greenleaf, Fort Oglethorpe, Ga., and was then ordered to the Embarkation Hospital, Camp Stewart, Va., in November, 1918; died at Champaign, December 14, from pneumonia following influenza.

James J. Beaton ⊕ **Lieut., M. C., U. S. Army,** Waycross, Ga.; Atlanta (Ga.) School of Medicine, 1909; aged 31; who entered the Army at Camp Grant, Rockford, Ill., and was transferred thence to Camp Lee, Petersburg, Va., for special duty and later to Hoboken and Camp Merritt, N. J.; died at Camp Merritt, February 8.

George Hudson, Stillwater, N. Y.; Albany (N. Y.) Medical College, 1882; aged 68; a member of the Medical Society of the State of New York; a member of the village board of health, president of the village board of education, and for several terms president of the village; died at his home, January 30, from appendicitis.

Elias Cameron Crummey ⊕ **Capt., M. C., U. S. Army,** Jesup, Ga.; Atlanta College of Physicians and Surgeons, 1905; aged 47; secretary of the Wayne County Medical Society from 1915 to 1917; on duty at Camp Wadsworth, Spartansburg, S. C., Died, November 26, from bronchopneumonia.

John Allen MacCormick ⊕ Boston; Harvard Medical School, 1902; aged 45; assistant in the outpatient department of the Free Hospital for Women, Brookline, Mass.; visiting gynecologist to Tremont Dispensary, Boston; died in St. Elizabeth's Hospital, Boston, February 16, from uremia.

Thomas Goodglick ⊕ **Lieut., M. C., U. S. Army,** Seattle; College of Physicians and Surgeons in the city of New York, 1916; aged 25; on duty with the Aviation Section, Signal Corps, in Oregon; died at North Bend, Ore., November 8, from bronchial pneumonia following influenza.

John Bishop Hazel, Hoopeston, Ill.; Hospital College of Medicine, Louisville, Ky., 1883; aged 69; a member of the Illinois State Medical Society and a specialist in diseases of the eye, ear, nose and throat; died at his home, January 20, from heart disease following influenza.

Harry D. Baldwin, Elyria, Ohio; New York Homeopathic Medical College, New York City, 1875; aged 64; at one time a member of the Ohio State Medical Association; a member of the staff of the Elyria Memorial Hospital; died at his home, February 25, from heart disease.

⊕ Indicates "Fellow" of the American Medical Association.

Alexander Lowry Ivins ⊕ Sayville, N. Y.; New York Homeopathic Medical College, New York City, 1911; aged 33; for several years surgeon of copper companies in Peru and Chile; died in King's Hospital, Bay Shore, L. I., N. Y., from pneumonia following influenza.

Albert S. Sherrick, Alverton, Pa.; Western Reserve University, Cleveland, 1885; aged 56; died at his home, February 11, from the effects of injuries received the day before, when he was struck by a street car while returning from making a professional call.

Charles Aubrey Bucklin, New York City; Bellevue Hospital Medical College, 1875; aged 64; instructor in diseases of the eye, ear, nose and throat in his alma mater in 1892; died at the home of his daughter in Glasgow, Scotland, February 13.

William P. Painter, Darby, Pa.; Jefferson Medical College, 1875; aged 76; for several years in the United States service; vice president of the First National Bank of Darby, and director of the Lansdowne Trust Company; died at his home, February 14.

William Glenn McKinney ⊕ Pittsburgh and Pitcairn, Pa.; University of Pennsylvania, Philadelphia, 1894; aged 50; local medical examiner for the Pennsylvania Railroad; died at his home, about February 25, from pneumonia following influenza.

John Little, Jr., Tuscaloosa, Ala.; Tulane University, New Orleans, 1889; aged 77; a member of the Medical Association of the State of Alabama; vice president of the Federal Savings Bank, Tuscaloosa; died at his home, February 1.

George P. Blundell, Yazoo City, Miss.; Tulane University, New Orleans, 1875; aged 71; at one time a member of the Mississippi State Medical Association; a Confederate veteran; also a pharmacist; died at his home, February 12.

John Palmer Matthews ⊕ Carlinville, Ill.; Marion-Sims College of Medicine, St. Louis, 1892; aged 51; local surgeon of the Q., C. and St. L. Railroad; died at his home, January 23, from septicemia due to an infected tooth.

Edward Benjamin Harrell, La Ceiba, Honduras, Central America; Tulane University, New Orleans, 1888; at one time sheriff of San Jacinto County, Texas; died at his home, February 6, from pneumonia following influenza.

Walter Wesley Rhyan, La Vina, Calif.; Starling Medical College, Columbus, Ohio, 1903; aged 46; formerly assistant physician and surgeon to the Esmeralda General Hospital, Goldfield, Nev.; died at his home, February 18.

Hiram A. Wood, Houston, Texas; Chattanooga (Tenn.) Medical College, 1895; aged 54; died in the Baptist Sanitarium, Houston, February 18, from the effects of burns accidentally received at his home, two days before.

Carlos E. Bowman, Alden, N. Y.; University of Buffalo, N. Y., 1883; aged 62; health officer and for several years president of the village and town of Alden; died in Escondido, Calif., February 7, from pneumonia.

Blaney William Cox ⊕ **Lieut., M. C., U. S. Army**, Goldesboro, N. C.; North Carolina Medical College, Charlotte, 1915; aged 30; a specialist in neurology; died, October 8, from pneumonia following influenza.

Thomas A. Strasser, Reading, Pa.; University of Pennsylvania, Philadelphia, 1867; aged 73; at one time county physician of Lehigh County; died at the home of his daughter in Reading, February 16.

George Edwin M. Herbst, Friedensburg, Pa.; Jefferson Medical College, 1878; aged 61; for several years a representative from Berks County in the state senate; died at his home, February 17.

Joseph Mellor, Cleveland; University of London, England, 1861; aged 78; the first city milk inspector of Cleveland; who served in India during the Indian mutiny; died at his home, February 15.

Stephen D. Lyles, Wagoner, Okla. (license, Oklahoma, act of 1908); aged 60; at one time a member of the Oklahoma State Medical Association; died at his home, February 1, from heart disease.

George William Salter, Brooklyn; Eclectic Medical College of the City of New York, 1895; aged 68; was found dead in his office in Brooklyn, February 11, from heart disease.

Charles Edgar Holbrook ⊕ **Lieut., M. C., U. S. Army**, Montreal, Que.; McGill University, Montreal, 1908; aged 33; died in the Royal Victoria Hospital, Montreal, October 18.

Alexander L. Pomeroy, Windsor, Ohio (license, Ohio, 1896); aged 96; at one time a member of the Ohio State Medical Association; died at his home, February 10.

George Jacob Stubenrauch, Chicago; University of Illinois, Chicago, 1910; aged 46; at one time a member of the Illinois State Medical Society; died at his home, February 23, from angina pectoris.

Lewis Henry Plimpton, Norwood, Mass.; Harvard Medical School, 1879; aged 68; a member of the Massachusetts Medical Society; died suddenly in Boston, February 21, from heart disease.

Frank Martin Dedaker ⊕ **Lieut., M. C., U. S. Army**, Gloucester City, N. J.; University of Louisville, Ky., 1910; aged 31; died at his home, October 6, from pneumonia following influenza.

Harriet Hooton Hanna Hubbell, San Francisco; Cooper Medical College, San Francisco, 1890; aged 72; died at St. Luke's Hospital, San Francisco, February 16, from arteriosclerosis.

Henry Bobb, East Greenville, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 72; died suddenly in the home of his daughter in Philadelphia, February 20, from heart disease.

Myron Levi Chamberlain ⊕ Boston; Bellevue Hospital Medical College, 1867; aged 74; a medical cadet, U. S. Army, during the Civil War; died at his home, February 13.

John R. Elder, Bear Branch, Ind.; Kentucky School of Medicine, Louisville, 1905; aged 39; died at his home, February 20, from pneumonia following influenza.

James W. McCarty, Owensboro, Ky.; Louisville, Ky., Medical College, 1876; aged 70; a member of the Kentucky State Medical Association; died, December 31.

Eben W. Keeney, Newport, Ky.; Medical College of Ohio, Cincinnati, 1870; aged 70; a member of the Kentucky State Medical Association; died, December 4.

John Cleon Kerr ⊕ **Lieut., M. C., U. S. Army**, Hazlewood, Pittsburgh; University of Pittsburgh, 1912; aged 31; died October 27, from bronchopneumonia.

Leonard Alling Shepard, Berkeley, Calif.; Miami Medical College, Cincinnati, 1873; aged 66; died at his home, February 17, from a nervous breakdown.

John R. Tuttle, Wheeling, Ind. (license, Indiana, 1897); aged 61; a practitioner for thirty-six years; died at his home, February 21, from nephritis.

Harold Ward Pyle ⊕ Oberlin, Ohio; Cleveland Homeopathic Medical College, 1897; aged 47; died at his home, February 13, from heart disease.

Cecilius Calvert Steuart ⊕ Baltimore; University of Maryland, Baltimore, 1882; aged 58; a specialist in pediatrics; died at his home, February 14.

William Creighton Bloomer, Cleveland; Starling Medical College, Columbus, Ohio, 1898; aged 49; died at his home, February 5, from pneumonia.

John Collier Laidley, Carmichaels, Pa.; University of Pennsylvania, Philadelphia, 1895; aged 50; died at his home, about February 25, from influenza.

John M. Campbell, Saginaw, Mich.; McGill University, Montreal, 1890; aged 71; died at his home, February 7, from disease of the stomach.

W. Sanford Kemp, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1866; aged 75; died at his home, February 15, from heart disease.

John M. Suttles, Atlanta, Ga.; Southern Medical College, Atlanta, 1884; aged 69; died in a private sanatorium in Atlanta, January 28.

Henry S. Haskin ⊕ Highland Park, Ill.; University of Michigan, Ann Arbor, 1872; aged 69; died suddenly at his home, February 16.

Daniel Bodifield, Cleveland; American Eclectic Medical College, 1878; aged 87; died at his home, February 5, from acute gastritis.

Sophronia A. Thomlinson, Shiloh, N. J.; Woman's Medical College of Philadelphia, 1878; aged 80; died at her home, February 14.

Alonzo Dow Husted ⊕ Pittsburgh; University of Worcester, Cleveland, 1887; aged 63; died at his home, about February 25.

Jacob Ernest Brecht ⊕ Fort Myers, Fla.; Washington University, St. Louis, 1874; aged 76; died at his home, January 6.

Irving Etienne Richard, Providence, R. I.; Jefferson Medical College, 1916; aged 27; died at his home, January 26.

Herbert H. Howe ⊕ Yantic, Conn.; University of Vermont, Burlington, 1880; aged 65; died, February 4.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

EVADING A FRAUD ORDER?

Has "Orchis Extract" of the "Packers Product Company" Become "Organo Tablets" of the "Organo Product Company?"

Inquiries have recently come to the Propaganda department regarding the Organo Product Company, 11 West Randolph Street, Chicago, which sells "Organo Tablets" as a cure for "lost vitality"! When the first inquiries came in, no advertising matter accompanied them. Investigation showed that 11 West Randolph Street was the headquarters of a "men's specialist," one John G. Gill, long identified with Chicago quackery.

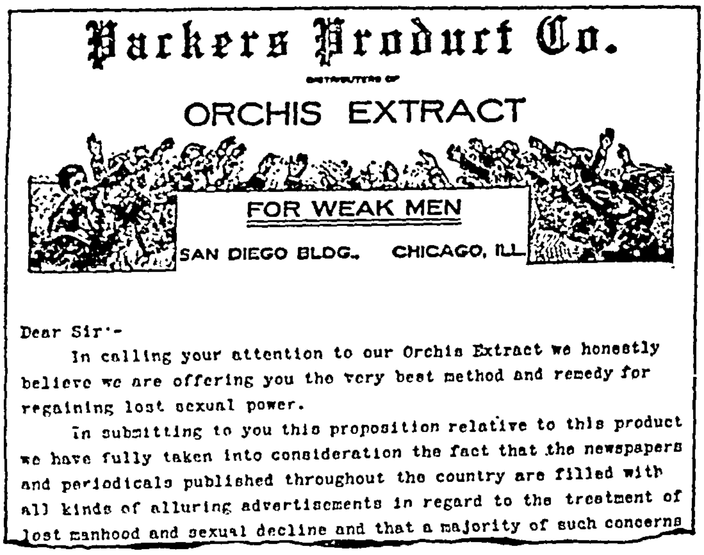
For several years Gill operated a medical mail-order fakery, known as "The Edson Institute," Chicago. He abandoned the business when the federal authorities began to make it uncomfortable. Later, he was connected with one Burgess, another advertising quack in Chicago, himself a hireling of a syndicate of quacks. Gill left Burgess after a few months, to take a position with a similar fakery, known as "Dr. White, Specialists." A reporter for the Chicago *Tribune*, whose exposures of Chicago's quacks have made the "advertising specialist" business in that city a rather hazardous commercial undertaking, stumbled on to the "White" fakery and gave it some very unpleasant publicity. As a result "Dr. White"—which was not his name—left Chicago between days, owing John G. Gill $500. So, at least, Gill claimed when he was called before the Department of Registration and Education of the State of Illinois, to answer some rather pointed questions about his quackish activities. Further, according to Gill's testimony, he (Gill) brought suit against, and made a levy on the office fixtures left behind by White. These fixures were sold on attachment by the bailiff of the municipal court, and, according to Gill, were purchased by Fred A. Leach, from whom Gill claims he is buying them on the instalment plan.

This brings us to Mr. Leach. Some of our readers will remember that Fred A Leach operated the Packers Product Company, a mail-order fraud that sold "Orchis Extract," until it was put out of business by the government in April, 1918. Leach has been in the mail-order business for a good many years. He was manager of the "Distributors' Guarantee Association," against which a fraud order was issued in 1908; under the name of "Vacuum System" and "David Kuno" he sold vacuum developers for the alleged enlargement of the penis; and under the name of "The Ausin System" he also handled vacuum developers and later yet sold similar devices under the name of the "Wade Manufacturing Company."

These facts pointed to a probable community of interest between the "Organo Product Company" of 11 West Randolph Street, and its "Organo Tablets," and the fraudulent "Packers Product Company" and "Orchis Extract." Then came some of the advertising matter of the Organo Product Company. Even a superficial comparison of the circular letters and booklets used in exploiting Organo Tablets showed the close resemblance between this humbug and the government-declared fraud—Orchis Extract of the Packers Product Company. The wording of the letters and booklets is almost identical. Even an old testimonial for Orchis Extract appears (under a new address) for Organo Tablets. Compare, for instance:

TESTIMONIAL FOR ORCHIS EXTRACT	TESTIMONIAL FOR ORGANO TABLETS
"Mound City, Mo.	"Louisville, Ky.
"*Gentlemen:*—Enclosed find $2 for which please send me one more package of Orchis Extract. I think it is helping me so I am going to continue the use of it until I think I am cured."	"*Gentlemen:*—Enclosed find $2 for which please send me one more package. I think it is helping me, so I am going to continue the use of it until I think I am cured."

Doubtless when the facts detailed above are brought to the attention of the federal authorities, an investigation will be made. Then, possibly, it may be necessary to extend the fraud order issued against the Packers Product Company to cover the Organo Product Company.



Packers Product Co.

DISTRIBUTORS OF

ORCHIS EXTRACT

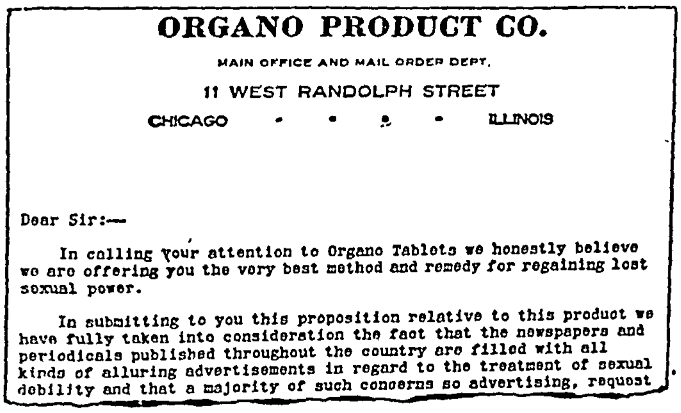
FOR WEAK MEN

SAN DIEGO BLDG., CHICAGO, ILL.

Dear Sir'-

In calling your attention to our Orchis Extract we honestly believe we are offering you the very best method and remedy for regaining lost sexual power.

In submitting to you this proposition relative to this product we have fully taken into consideration the fact that the newspapers and periodicals published throughout the country are filled with all kinds of alluring advertisements in regard to the treatment of lost manhood and sexual decline and that a majority of such concerns



ORGANO PRODUCT CO.

MAIN OFFICE AND MAIL ORDER DEPT.

11 WEST RANDOLPH STREET

CHICAGO • • • • ILLINOIS

Dear Sir:—

In calling your attention to Organo Tablets we honestly believe we are offering you the very best method and remedy for regaining lost sexual power.

In submitting to you this proposition relative to this product we have fully taken into consideration the fact that the newspapers and periodicals published throughout the country are filled with all kinds of alluring advertisements in regard to the treatment of sexual debility and that a majority of such concerns so advertising, request

Facsimiles (reduced) of part of two circular letters sent out by the Packers Product Co. and the Organo Product Co., respectively. Notice the similarity of wording. The Packers Product Co. was the name under which one Fred A. Leach operated a fraud to which the federal authorities denied the use of the U. S. mails. Leach is now located at 11 West Randolph Street, Chicago, which houses the Organo Product Co. and "Dr. Gill, Specialist."

DEPILAGIENE

"Depilagiene," or, to give it its full title, "Franco-American Hygienic Depilagiene," is one of a large number of toilet preparations put on the market by the Franco-American Company of Chicago. In a booklet issued by the Franco-American Hygienic Company, we read that "Depilagiene is an objectionable hair remover," which seems to be the concern's way of saying that it is a remover of objectionable hair. An original bottle of Depilagiene was submitted to the A. M. A. Chemical Laboratory for examination, and the chemists' reported as follows:

"The bottle of Depilagiene contained 18.5 grams of a pink powder having an odor resembling that of oil of citronella. Qualitative tests showed the presence of barium, sulphur, sulphid, sulphate, and small amounts of aluminum and calcium; aromatic oils and a red dye were also present. Essentially, the product is a mixture of barium sulphate, barium sulphid, sulphur and starch. A quantitative investigation of the active ingredient, barium sulphid, was made, and disclosed the presence of 22.6 per cent. of this drug. As commercial barium sulphid contains only about 50 per cent. of the pure chemical, Depilagiene probably contains approximately 45 per cent. of the commercial drug."

It will thus be seen that Depilagiene has no claims to originality, as practically all the chemical "hair removers" are composed of some form of sulphid. Naturally, the preparation is likely to cause more or less irritation of the skin, the amount depending to some extent on the way in which it is used, and to an even greater extent on the tolerance of the individual skin. Like all chemical depilatories, the use of Depilagiene must make the hair coarse.

Correspondence

ANILIN, RATHER THAN NITROBENZENE, AS THE POISON IN SHOE DYE

To the Editor:—More than the usual amount of interest seems to be manifested in the cases of poisoning from shoe dye reported from Camp Johnston, and it would appear to be in the interest of our records of the effects of poisons to determine definitely just what was the poisonous agent in this case. Being connected with a company engaged for many years in the manufacture of the several substances which may here come under suspicion, I have had to give some attention to the effects as manifested in workmen. The gross appearance of the blood as described did not impress me as suggestive of poisoning by a nitro compound (nitrobenzene) but as poisoning by anilin. The effects of both of these substances are quite similar, but the nitro compounds are more likely to bring about a destruction of the red cells and cause the blood to present the appearance of chocolate; while anilin is more likely, at least in its early stages, to cause the dark (asphyxiated) condition described. Anilin is quicker in its action and more quickly recovered from, but, more important from the standpoint of the present case, shows a particular predilection to penetrate leather and rapidly poison by skin absorption, so that we have been obliged to take special precautions regarding the shoes worn by anilin workmen. Both agents will cause cyanosis.

Nitrobenzene is widely used as a cheap perfume, and while it was probably present in some proportion in the preparation used by "Toney," I am tolerably confident that a chemical examination will show a much larger proportion made up of anilin, used as a solvent or mordant for the dye which gives the leather its desired color.

W. G. Hudson, M.D., New York.
Medical Director, E. I. du Pont de Nemours & Co.

"A NEW TREATMENT FOR THE MORPHIN HABIT"

To the Editor:—The article by Dr. C. S. Bluemel on "A New Treatment for the Morphin Habit" (The Journal, Feb. 22, 1919, p. 552) is based on such unwarranted assumptions that it should not pass unnoticed. Dr. Bluemel states that (1) the "immunity" (tolerance) is probably due to the presence of an antibody or antitoxin in the blood, and that (2) physicians have come to believe that a definite antibody to morphin is formed in the blood, and that the unneutralized antibody is the cause of the withdrawal symptoms.

The first statement, so far as is known, is without any basis of fact. Alkaloids do not produce antibodies. This has been established by many investigators. It would be perhaps more in accord with the facts to say that many investigators have failed to find evidence that anything except protein produces antibodies. In view of this, if Dr. Bluemel has any definite evidence to the contrary he should have stated it in his article. Even when antitoxins are formed, they act only to neutralize toxins. They exert no direct action on the body cells (Ehrlich, Behring) and could therefore not account for the withdrawal symptoms of morphin. Now, it is quite possible that the view of Ehrlich and Behring is wrong. It is also unfair to ask any one to accept their opinion unqualifiedly; but the reputation of these men is such that those who disagree with them should give some basis more adequate than "purely theoretical considerations." Dr. Bluemel has given no adequate support for his opinion. Physicians have no reason for this belief, and I am of the opinion that relatively few hold such a view.

The result of Dr. Bluemel's treatment is not under discussion, since it is quite possible to get good results from a wrong hypothesis. However, even if we grant his assumption and admit that saline solution will aid such cases, there is no reason for giving this intravenously. This method is much abused and should never be used except for sufficient reason. Salt solution is so rapidly absorbed from the gastrointestinal tract and so devoid of action on the intestine that there is little excuse for giving it intravenously.

Hugh McGuigan, M.D., Chicago.

To the Editor:—The article by Dr. C. A. Bluemel on the treatment of the morphin habit is very interesting. The doctor has not given us statistics regarding the ultimate recovery of these patients from the disease of morphinism. This is the important point in the treatment of these cases. From personal investigations I know that withdrawing the drug from the patient is a simple process, provided the patient has been prepared beforehand by a few weeks' observation and preliminary reduction. What we are looking for in these cases is positive results. These are not obtained by one, two or three weeks of treatment, but rather by several months or years of careful observation and conscientious treatment of each individual case.

W. B. Reed, M.D., Rochester, N. Y.

HARMLESSNESS OF GLASS IN DIGESTIVE TRACT

To the Editor:—Forty-five years ago I was called to attend one boy, aged 4 years, and two girls, aged 5 and 6, who had eaten corn bread with powdered glass in it. The bread had been prepared to kill rats. I gave an emetic, followed in one hour with boiled potatoes, till the stomachs of the children were filled. In one hour I gave castor oil. The potatoes were expelled by rectum thoroughly mixed with fine glass. The children all recovered without any untoward symptoms.

A. H. W. Sullivan, M.D., Miami, Mo.

To the Editor:—One morning I was summoned to the house of an aged and infirm patron, who was temporarily caring for two of her orphan granddaughters, who were about 14 years of age; they were cousins and almost inseparable. They were in agony, making effort to evacuate the bowels without success, referring the intense pain to the region of the rectum. On digital examination I found the sphincters closely contracted and a mass of gritty substance. After making sufficient digital dilatation I was enabled to remove several ounces of broken glass from the size of coarse sand to that of grains of corn, followed by some venous hemorrhage, which was of short duration. After a brisk cathartic a prompt recovery followed without untoward results. My curiosity was naturally aroused as to the motive for the ingestion of the glass and the manner in which it was done. The girls informed me that they had been reproved by their grandmother for being out on the streets late at night and had been forbidden to repeat the performance. Considering that life was not worth living if they were to remain housed up without privileges of the gaieties of the outer world, they formed a compact that they would destroy their own lives and would never be separated. The manner of accomplishing it was the puzzling question. They preferred poison, but knew it was impossible to procure any. One of them remembered hearing that feeding a dog with pounded glass incorporated in his food was sure death. They found two beer bottles and took them to a toilet in the rear of the dwelling. With a hammer they pounded the bottles on the floor as fine as they could in separate places, so that each might get an equal amount. They directed me to the place, where I found the unmistakable evidence. One of the bottles was bluish and the other transparent, corresponding with the glass I had removed.

G. J. C. Wintermute, M.D., Celina, Ohio.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICAL EXEMPTIONS IN INCOME TAX

To the Editor:—Will you kindly inform me if roentgen-ray plates and replacement of roentgen-ray tubes can be deducted as business expense in the income tax report?

L. Amster, M.D., Atlanta, Ga.

Answer.—Roentgen-ray plates and tubes, while equipment, would come under the same head as drugs, bandages, etc., because they are constantly breaking and have to be replaced. The cost of roentgen-ray machinery would, of course, be an investment, but the upkeep of the machine and the cost of replacement of material would be an expense.

To the Editor:—1. I noticed your editorial on preparing income tax accounts. This has been exceedingly puzzling to me as I am an oculist doing refraction work, and, being situated inland, have to furnish the glasses for my patients. The "glasses" are merchandise, and I am supposed to report the merchandising profit on the glasses besides any professional charge that I may incorporate in the total charge for the glasses, keeping the two items separate. I am not able to do so. What should I do? 2. Please advise what annual depreciation you would think fair on a medical library, surgical instruments and office furniture and fixtures.

J. C. McAllister, M.D., Ridgway, Pa.

Answer.—1. If your bookkeeping methods do not enable you to separate the mechandising profit on glasses furnished patients from your charges for professional services, you will have to make an estimate, as nearly accurate as possible, for the 1918 return. It would be advisable, however, to modify your bookkeeping methods so as to separate these items in the future.

2. The maximum annual depreciation of an article should not be greater than the original cost of the article, divided by the number of years it can be used. A physician's library is a permanent investment, and is not supposed to wear out or become useless; therefore, no depreciation could be estimated. Depreciation on instruments, furniture and fixtures should be the original cost divided by the number of years in which they can be used, or are of any value.

To the Editor:—May I suggest publication of the following example, issued by a local banking institution to aid physicians who are having difficulty in making their income tax statements.

A. R. C.

Answer.—The example follows: George Lee is a physician supporting a family consisting of his wife, two children under age and two over 18 years of age. He owns an automobile which he uses both in his professional work and for pleasure, fully three fourths of its use being for business. During 1918 the cost of running the automobile, including the salary of his chauffeur, was $1,456; gasoline, repairs and other expense, $1,638.25; insurance, $53.85. The depreciation of the automobile is estimated at $150, one tenth of its original cost. During the year the doctor spent $437 for club and lodge dues, entertainment, etc., which he charges to an account called "good will promotion." To the same account he charges $200 which he donated to the local charity organization and $17 which was his expense on a short trip to give a free lecture for a local Y. M. C. A. He spent $460 during the year attending medical conventions, $36 for medical journals and dues for medical societies, and $300 for books and instruments of a permanent value. His office and traveling expenses were $14,948.40 for the year. His professional fees amounted to $30,653 for the year, and in addition he received $419.30 as compensation for a short period which he served in the army before the armistice. He spent $600 for uniforms, equipment, etc., when in the army. Dr. Lee also owned a house which he rented during the year for $1,356. The expenses for repairs, insurance, etc., on this house were $16.06, and the depreciation is estimated at $200. The taxes on this rented property and on the home of Dr. Lee amounted to $509.19. The doctor's wife received $95 as interest on a mortgage. How will Dr. Lee report his net income? Answer: The gross income from services will include the professional fees, amounting to $30,653, but not the compensation received in the army. From this will be deducted the office and traveling expenses, three fourths of the automobile expense and depreciation, expenses of attending conventions, and the cost of medical journals and societies, a total of $17,917.97, making his net income from services $12,735.03. The club dues, etc., and the cost of army equipment are personal expenses. The cost of books and implements is not deductible, but the doctor should carry a property account and charge off a depreciation and obsolescence allowance on such property. The net income from the rented property is $1,139.94. The interest on Mrs. Lee's mortgage will be included on the doctor's return. The taxes will be deducted as will the $200 charitable donation. The $17 is deductible because it was an expense and not a donation, although incurred in a charitable enterprise. The total net income was therefore $13,085.78, on which the normal tax, deducting the $2,400 exemption, is $1,042.29, the surtax $244.29, and the total tax is $1,286.58. Adding the $5.70 normal tax on the income of Mrs. Lee, the total tax as shown by the return is $1,292.28.—1919 Federal Income and War Tax Laws, Halsey, Stuart & Co.

CREEPING ERUPTION: LARVA MIGRANS

To the Editor:—I have a patient who has a parasitic skin disease due to a burrowing animal parasite. The track of the parasite is plainly visible as a very fine red line under the horny layer. It seems to work mainly at night, when an intense itching takes place. At the end of the track is a slightly elevated papule. I should be glad to have you inform me as to the name of this parasite. I have recently seen two patients similarly infected, one on the dorsal surface of the left thumb, and the other on the anterior surface of the left thigh. I have employed tincture of iodin with indifferent results, the iodin serving mainly to stop the working of the parasite, when after a period of quiet it would resume its excursions again.

A. E. Conter, M.D., Apalachicola, Fla.

Answer.—This condition is also known as larva migrans, and is produced by the wandering in the skin of a larva which leaves behind it an inflammatory track. The larva wanders indefinitely under the skin and produces a narrow red line which is slightly raised. It usually travels at the rate of an inch or more a day. The direction is not regular. The most active part of the line is the advancing end. The larva itself is usually found a quarter of an inch or more in advance of the active advancing end of the line, and is denoted by itching or burning. The treatment consists in destroying the larva. Hutchins, in the *Journal of Cutaneous Diseases*, 1906, suggested the injection of cocain solution followed by the injection of one or two drops of chloroform, the needle being inserted behind the advancing end of the track and pushed forward to the probable location of the parasite. Stellwagon cured several cases by incision with mercuric chlorid and the application of a minute quantity of nitric acid to the suspected site of the parasite. A general discussion of the subject appeared in The Journal, Jan. 15, 1916, p. 172, in an article by Knowles.

A Great Responsibility on the Profession.—According to the regulations of the Ontario (Canada) License Board, a duly qualified medical practitioner is legally entitled to carry in his house or in his office 10 gallons of liquor. He can procure 1 quart for medical practice from any qualified druggist, or he can purchase from a vendor or distiller any quantity up to 10 gallons. When the physician in his judgment considers a larger quantity of liquor necessary for his patient than the prescribed 6 ounces, he can issue a prescription for 1 dozen bottles of ale, beer or porter containing not more than three half pints each, or 1 quart of wine or distilled liquor, which can only be procured from one of the seven vendors of Ontario. None of the foregoing liquor mentioned can be legally used for beverage purposes. All the provisions mentioned for procuring liquor are absolutely for medical use only.—From the *Canadian Practitioner and Review.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

California: Los Angeles, March 17-20. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

Colorado: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, March 11-12. Sec. Reg. Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 730 State St., Bridgeport, and Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven

District of Columbia: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Idaho: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

Iowa: Iowa City, March 24-26. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Maine: Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Massachusetts: Boston, March 11-13. Sec., Dr. W. P. Bowers, Rm. 501, No. 1 Beacon St., Boston.

Minnesota: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Montana: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

New Hampshire: Concord, March 13-14. Sec., Dr. Charles Duncan, Concord.

New Mexico: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

Oklahoma: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

Rhode Island: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

Utah: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

REPORT OF THE SIXTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The sixth examination of the National Board of Medical Examiners was held in Chicago and New York, Dec. 2-19, 1918. The written examinations were held simultaneously in the two places. The laboratory and clinical examinations immediately followed the written examination at Chicago, while in New York this part of the examination was held from the 14th to the 19th of December. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50; medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted a failure.

There were eighty-nine applicants who applied for examination. Seventy were found to have the essential preliminary and medical qualifications, but owing to the epidemic of influenza and to many candidates having been called into service, only sixteen appeared for examination, of whom fifteen passed and one failed. The following colleges were represented:

PASSED

Names of Candidates and Colleges	Year of Graduation
Ralph Herbert Eisaman, Northwestern Univ. Med. College	1918
Charles Edward Watts, Rush Medical College	1918
Robert Lee Kerrigan, Rush Medical College	1918
William Hart Elmer, Northwestern Univ. Med. College	1918
Arthur Spaulding McQuillan, Cornell Medical College	1916
George William H[illegible], Jr., Northwestern Univ. Med. College	1918
Barnet Edward Bonar, Rush Medical College	1918
Samuel Abraham Durr, Northwestern Univ. Med. College	1918
Willard David White, Rush Medical College	1918
John Albert Wilson, Columbia Univ. College of P. & S.	1917
Gilman S. Currier, Columbia Univ. College of P. & S.	1918
Arthur Teninga, Rush Medical College	1918
Russell John Callander, Rush Medical College	1918
Horace Ensign Groom, Rush Medical College	1918
Samuel Thomas Foster, Northwestern Univ. Med. College	1918

FAILED

Rush Medical School	1918

In the case of candidates from the Rush Medical School, the M.D. certificate is withheld pending the completion of the one year internship. For successful candidates who have not completed their intern year, the board's certificate is withheld pending the completion of that work.

The general average of candidates is based on subject values as rated by the board.

AVERAGES OBTAINED

Candidate's Number	Anatomy; Value, 100	Chemistry; Value, 75	Materia Medica, Pharmacology and Therapeutics; Value, 75	Obstetrics and Gynecology; Value, 75	Hygiene; Value, 50,	Medicine; Value, 200	Surgery; Value, 200	Pathology; Value, 75	Bacteriology; Value, 50	Physiology; Value, 75	Medical Jurisprudence; Value, 25	Final Averages
1	70	90.6	80	76	50	83.5	81.25	80	66	89.3	80	789.5
2	90	96	84	92	58	89.5	86.5	86.6	66	86.6	72	856
3	73	93.3	77.3	89.3	55	78.5	85.25	66.6	70	93.3	72	796
4	59	98.6	68	80	55	67	85.25	74.6	66	93.3	48	747
5	74	93.3	82	89.3	73	78.5	88.5	78.6	74	98	80	831
6	90	96	82.6	93.3	80	89	88.5	86.6	76	88	96	882
7	85	96	80	89.3	88	81.5	89.7	92	86	97.3	68	878.5
8	71	92	74.6	70.6	66	84.5	88.7	88.6	64	93.3	76	816
9	73	96	84	89.3	90	85	91.5	88	80	89.3	80	866
10	72	90.6	82.6	70.6	52	82.5	84.25	86.6	74	89.3	68	800.5
11	65	93.3	81.3	80	73	78.5	86	84	74	88	96	811.5
12	80	93.3	85.3	80	87	85	82	87.3	80	85.3	80	841
13	70	93.3	84	76	80	89.5	86.5	87.3	80	76	80	834.5
1	85	80.6	89.3	85.3	85	84.5	81.5	88	84	89.3	68	844.5
2	76	84	80	76	85	82.5	83	87.3	74	86.6	72	815
3	80	80.6	89.3	76	50	85	79.75	85.3	76	93.3	92	815.5
General aver. by subjects	75.8	91.8	84.5	82	66.7	83	85.5	84.2	74.4	89.6	76.9	

EXAMINATIONS AND TIME ALLOWED

Subject	Kind of Examination	
	Written	Other, and Remarks
Anatomy	3 hours	Oral with prepared spec. 20 min. for each candidate
Chemistry	3 hours	Two hours laboratory in physiologic chemistry
Physiology	3 hours	Laboratory 2 hours
Pathology	3 hours	Laboratory exam., 20 min. each cand.
Bacteriology	2 hours	Laboratory 2 hours
Materia medica, pharmacology and therapeutics	3 hours	Laboratory 2 hours
Medicine	3 hours	Clinical lab., 1 hour each cand.; clinical med., 3 hours
Surgery	3 hours	Lab. op. surg. and applied anatomy, 3 hours; clin. exam., 3 hours
Eye, ear, nose and throat	....	Clinical exam., 30 min. each candidate
Dermatology	....	Clinical exam., 30 min. each candidate
Obstetrics and gynecology	3 hours	
Hygiene	2 hours	
Medical jurisprudence	2 hours	

Iowa December Examination

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Dec. 10-12, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1917)	87.2
Hahnemann Med. Coll. and Hosp. of Chicago	(1919)	87.2, 87.2, 87.6
Loyola University	(1917)	85.6
St. Louis College of Physicians and Surgeons	(1910)	80.1
Vanderbilt University	(1916)	81.6

Iowa Reciprocity Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 2 candidates were licensed through reciprocity at the meeting held Jan. 6, 1919. The following colleges were represented:

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1905)	Missouri
University of Pennsylvania	(1902)	Penna.

Book Notices

Gasoline and Kerosene Carburetors: Construction, Installation, Adjustment. A Simple, Comprehensive Treatise for Practical Men, Explaining All Principles Pertaining to Carburetors for All Types of Internal Combustion Engines Intended to Operate on Liquid Fuels Such as Gasoline, Kerosene, Benzol and Alcohol; All Leading Types of Carburetors and Their Adjustment Are Fully Described. By Victor W. Pagé, M.S.A.E. Invaluable to Repairmen, Students and Motorists; Includes the Most Complete Exposition on Kerosene Carburetors Ever Published. Cloth. Price, $1.50. Pp. 206, with illustrations. New York: Norman W. Henley Publishing Company, 1919.

This is a simple treatise explaining basic principles pertaining to carburetion, and showing how liquid fuels are vaporized and turned into gas for operating all types of internal combustion engines intended to operate on vapors of gasoline, kerosene, benzene and alcohol. Several types of carburetors are described. Carburetion troubles, fuel system trouble, carburetor repairs and installation, and modern carburetor developments are considered in a thorough manner. This book will prove a convenience to physicians owning automobiles.

Neoplastic Diseases: A Text-Book on Tumors. By James Ewing, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical College. Cloth. Price, $10 net. Pp. 1027, with 479 illustrations. Philadelphia: W. B. Saunders Company, 1919.

Since the very beginning of the study of tumors, the tendency has been to divide them into large groups or classes, and to regard representatives of the same group occurring in different places not merely as more or less closely related but as essentially identical and equivalent. We are in the habit of thinking of sarcoma as pretty much the same thing no matter what organ or tissue is involved primarily, and the same is true with regard to carcinoma and also other tumors. We have searched for one universal cause of cancer, and we speak commonly of the unknown cause of cancer as if there could be no question that malignancy is due to one definite, principal causative agent, which, of course, remains to be proved. In the efforts to devise simple, easily understood, and all-inclusive schemes for an orderly classification of tumors, the temptation naturally arises to subordinate and minimize many more or less obvious differences in the mode of origin and behavior of related but not identical or equivalent tumors. The centralizing point of view here indicated, the outcome largely of the influence of preconceived notions, is not conducive to progress, but tends rather to retard the growth of knowledge; it is therefore refreshing to find that the author of this new and imposing work on tumors has been under the spell of a larger and clearer vision. As indicated by the title—"Neoplastic Diseases"—tumors are here presented as specific diseases or clinical and pathologic entities, the essential facts in regard to which can be revealed fully only as intensive study is given to special forms and cases. The endeavor has been, to quote from the preface, "to analyze the numerous etiologic factors which meet in such diverse fashions in the inceptions of tumors, to emphasize the general dependence of clinical cause upon histologic structure, to trace the histogenesis to the last degree, impressing its essential importance when known, and to enumerate and contrast the more striking clinical features which are often highly characteristic of different tumors." We see that particularization rather than contemplation of general oncologic principles is the keynote. The contents are in two parts: The first, general oncology, occupies 148 pages and deals with historical matters, the matter of definition, malignancy, metastasis, chemistry and serology, theories in regard to cancer, special etiology, and experimental cancer research. The second part, special oncology, covers about 800 pages, and considers the particular forms of tumors and the tumors of the individual organs. There are extensive lists of references to the more important literature, and a large number of satisfactory illustrations almost wholly photographic; the microscopic structure of practically every form of tumor (except xanthoma) is reproduced. The title page states that this is a textbook on tumors; but it is much more extensive and detailed than the usual textbook, and it addresses itself especially to readers looking for complete information. It is a masterly production, the result of the earnest labor of many years; the style is lucid, fresh, vigorous; the discussion is extremely well advised, without bias, and adequate. There is, in fact, no other book that renders accessible in so well assimilated form so much knowledge in regard to the histogenesis and structure of all varieties of tumors.

The Humane Society of the Commonwealth of Massachusetts: An Historical Review 1785-1916. By M. A. DeWolfe Howe. Boards. Pp. 398, with illustrations. Cambridge: Riverside Press, 1918.

The Massachusetts Humane Society published its first pamphlets in 1787, and has continued its work since that time. The present book is based on the publications of the society. It is a beautifully prepared volume both as to typography and illustrations.

The work of a humane society comes very near to that of the medical profession. A humane society was organized in Philadelphia in 1780. Dr. Benjamin Say was the president of this society in 1799, and Dr. Benjamin Rush of Philadelphia was an early honorary member of the Massachusetts society. In 1793 he sent the president of this society two pamphlets widely distributed in Pennsylvania, and from one of them the Massachusetts society published an extract in 1893 relative to avoiding the danger of drinking cold water while the body is heated. The instigator of the Massachusetts society was Dr. Moyes, the organization of the society being described in its articles published in 1786. The first president of the society was His Excellency, Governor Bowdoin, and Dr. John Warren was the second vice president. One of the first publications of the society concerned methods of treatment to be used with persons apparently dead from drowning. This included regulations relative to warming the body and securing a good air supply. Some of the directions are:

> No persons are to be admitted into the room but those who are actually employed in exerting their utmost endeavors for the recovery of the unfortunate; six persons are therefore the greatest number that can ever prove useful on such occasions; and those who are by-standers for the sake of curiosity should be requested to withdraw, as their presence may retard or totally prevent the restoration.
>
> The smoke of tobacco thrown up the fundament should be ranked among the earliest applications; if a fumigator should not be at hand, the common pipe will answer the purpose of applying this vapour to the bowels. So easy and important an operation should be repeatedly performed, as the good effects of tobacco smoke have been proved in many cases.

At the same time instruments were devised for inflating and extracting air from the lungs.

An interesting sketch of Dr. John Warren appears in the first chapter of the book, also one of Dr. Isaac Rand. In a diary kept by Dr. Ethan Elliott, a brother of Dr. Rand, is given a table of fees of that date, running from a visit 50 cents, to a consultation $1, double fees at night, capital operations in surgery £5, opening an abscess 50 cents, and extracting a tooth the same.

The first thirty years of the society's work were devoted chiefly to humane efforts attached to maritime interests. The records contain many accounts of the saving of persons from drowning and of rewards for such service, including also accounts of the establishment of life-saving stations along the shore. The third chapter is concerned with rescues and resuscitations, the greatest attention being given to the resuscitation of the drowned. This is an excellent description of the scientific development of such methods.

The society, however, did not devote itself entirely to such methods for the relief of humanity. In 1790 Rev. Jeremy Belknap, one of the founders of the Massachusetts Historical Society, proposed to the humane society the establishment of a foundling hospital, and a committee was appointed and recommended "a consultation with the Medical faculty, in order most effectually to provide 'for the sick-poor, for the assistance of lying-in women, and for foundlings.'" Through their efforts the Boston Dispensary was established in 1796. At a meeting in 1799 a prize of $50 was voted to be given "for the communication of the greatest number of important and well-substantiated facts instrumental in giving origin to the Yellow Fever in the United States." The paper which won the prize was that of Dr. Samuel Brown of Lexington, Ky.

These are but a few of the interesting points brought out in this historical review, which carries the work of the humane society up to recent date. While of chief interest to those having an actual part in the work, the volume will have interest for all others who believe that "it is a pleasant exercise of the imagination to look upon old things as new, to acquire the realizing sense that a long established institution was once precisely as new as the newest organization of the present year and month with all its work to be done and all its history and traditions to be made."

Social Medicine, Medical Economics and Miscellany

Report of International Health Board

The report of the International Health Board for 1917, just issued, shows that notwithstanding the war, infection surveys were conducted in Tobago, Cayman Islands, Papua; demonstrations in relief and control of hookworm disease were carried on in twelve states in this country and twenty-two foreign states and countries; a beginning was made in the control of hookworm in mines by conducting a preliminary infection survey in mines in China; there was cooperation with the American Red Cross and with the French government in measures for the control of tuberculosis in France; experiments were conducted in Arkansas and Mississippi for the purpose of testing measures for the control of malaria; the yellow fever commission carried on survey work in Martinique and Venezuela; there was established and put in commission a hospital ship to bring medical and surgical relief to the inhabitants of the Sulu Archipelago, Philippine Islands; also a department of hygiene in connection with the Faculty of Medicine at the University of São Paulo, Brazil, and the completion of a scientific investigation of hookworm disease in Malaya, a report on which was made by the commission sent in 1915 to make the study.

The most extensive work of the board consisted in the efforts against hookworm. Two general outstanding features were the general improvement in sanitation in the regions investigated through the enactment of legislation aimed at the prevention of soil pollution, and the great increase in public appropriations in support and extension of the work. Two general plans have been followed in the hookworm work, the dispensary of the movable sort, which reaches a large number of people and is important for its educational value, and the intensive plan, in which a small area is selected and efforts are made to reach every inhabitant. The latter method gives a practical demonstration, in a limited area, of the possibility of controlling hookworm disease in all infected areas. At the same time it points the way toward the ultimate control of other preventable diseases by similar methods of direct attack. Of the drugs used the experience has been that thymol and chenopodium are most efficacious. In an experience with 13,000 cases in the South Sea Islands, scarcely an untoward symptom was encountered. Seventy-three per cent. of the persons treated in the Fiji Islands were cured by two treatments. Six months after treatment, reexamination showed that only 10 per cent. were reinfected. In an experiment it was shown that one treatment with chenopodium had an efficiency of 96 per cent., as compared with 89 per cent. for thymol, 47 per cent. for eucalyptus and 27 per cent. for beta-naphthol. In some countries, however, alarming symptoms and sometimes death followed the administration of chenopodium. Smaller doses are recommended. The Uncinariasis Commission found that the efficiency of 99 per cent. obtained by a single treatment with 3 c.c. of the oil divided into three doses and administered at hourly intervals was reduced to only 95 per cent. when the dose was cut in half, and untoward results were rare. Magnesium sulphate has been found to be the most efficient purgative after the oil.

An extended review of the hookworm situation in the various countries is contained in the report, the other activities of the board being given space commensurate with the extent of the work done, as in the malaria control experiments in Arkansas, public health training in Brazil, yellow fever work, and the work of the hospital ship in Philippine waters.

Walcott's Work in Brazil

The *Revista Medico-Cirurgica do Brazil* relates that at a recent meeting of the Academia Nacional de Medicina of Brazil, Dr. Allen Walcott was a guest and was proposed for corresponding member of the Academia. He is chief of the medical service of the great railway through the interior of Brazil, the Madeira e Mamoré R. R., and director of the Hospital de Candeleria. His work was described by Dr. A. Peixoto as, "since the Panama Canal, the most important and humanitarian work that has been done by modern hygiene," adding, "The success obtained by prophylaxis through this vast and rich zone has wiped the stain of unhealthfulness from tropical climates." He remarked that Dr. Walcott's own appearance, ruddy and robust, after nearly nine years' work in this field, is the best of testimony to the fact that he has transformed the country *da pestilencia á salubridade.* In describing the work of the medical department of the railroad, Dr. Walcott referred to some of the difficulties encountered, saying that malaria, beriberi and diphtheria ravaged the country. "It was indeed one vast cemetery. Those who come to Porto Velho today can have no conception of what conditions were when we started the work in those inhospitable lands, where the biped entered only at the sacrifice of his life." His observation soon convinced him that the beriberi of the Amazons was the same as the beriberi of Panama, and that its primordial cause is a one-sided diet. He promoted the cultivation of fruit trees, vegetables and a diversity of cereals, poultry and stock raising, etc., distributing seeds lavishly, and beriberi has now practically disappeared, as in this indirect way the populace were no longer restricted to the diet of *farinha de agua* alone, as formerly. Porto Velho is now a place where one can live with some comfort. One of the other speakers, Dr. T. Torres, said that in his town Manáos, "scarcely any vegetables or fruit are cultivated, poultry is imported from a long distance, and cabbages are imported from Lisbon to be sold at Manáos, while the population in the interior live exclusively on turtle meat and porridge (*farinha de agua*). The butcher shops sell only turtle meat, fish, game and the worst kind of beef. It is a most salutary example that has been set by the medical department of the Madeira e Mamoré R. R. at Porto Velho, fostering the cultivation of cereals, vegetables and fruits."

[Dr. Allen Moore Walcott is a graduate of the medical department of the University of California (1907), and served for a time in the Panama Zone.]

Report of United Fruit Company

In the annual report of the medical department of the United Fruit Company for 1918, attention is called to the loss of twenty-three of the staff of physicians during the year to enter the military service of the United States, and to the difficulty of securing suitable men to supply their places. Malaria, as heretofore, was the chief medical or sanitary problem. In the prophylaxis and treatment the forces were handicapped on account of the difficulty of procuring quinin in sufficient quantities, owing to the military requirements and regulations. The hospitals and dispensaries of the company treated 20,075 cases of malaria, with fifty deaths. There were forty-one cases of hemoglobinuria, with seven deaths. In the latter trouble one of the district superintendents suggested and used glucose in connection with physiologic sodium chlorid solution, with apparently good results, and the method will be employed in other districts and hospitals. *Balantidium coli* was found in two cases of dysentery in the Costa Rica division, in the persons of two laborers caring for pigs, in which as the host this parasite is found. In Cuba, among Haitian laborers, there was an epidemic of pneumonia which was attended by a high mortality. Seven cases of snakebite with two deaths, the snakes being the red viper and the water moccasin, were found in the Costa Rica division. Extensive sanitary work was continued in all the divisions, the work at Barrios, Guatemala division, being especially noteworthy. This was one of the most insanitary ports visited by the company's steamships. In connection with the International Railways of Central America it was cleaned up, and the condition with relation to mosquito infection is now greatly improved. One case of liver fluke (*Clonorchis sinensis*) was found in a Chinaman, and one case of mycetoma (Madura foot) and a number of cases of infestation with *Trichocephalus dispar* were reported. The company made an effort during the war to encourage the use of native foods, one instance being the use of boiled green banana pulp mixed with wheat flour dough in the making of bread, which effected a saving of from 25 to 30 per cent. of wheat. Physical examinations of all persons offering for employment resulted in the rejections of 7.8 per cent.

Eggs and Eggs

How to tell a bad egg is a question that has puzzled scientists, laymen and professional egg graders for many years, and it is evidently not yet a matter of mathematical accuracy. Any one can tell a bad egg after the shell is broken, but this is not the logical moment for the determination. The United States Department of Agriculture, through its Bureau of Chemistry, has published several interesting contributions on this subject (Eggs and Their Value as Food, Bull. 471, U. S. Dept. Agr. Bacteriological Study of Shell, Frozen and Desiccated Eggs, Bull. 158, Bureau of Chemistry. How to Candle Eggs, Bull. 565, U. S. Dept. Agr. Practical Suggestions for Preparation of Frozen and Dried Eggs, Circular 98, Bureau of Chemistry). The most recent study concerns accuracy in commercial grading of opened eggs. A previous bulletin of this department (A Bacteriological and Chemical Study of Commercial Eggs, Bull. 51, U. S. Dept. Agr.) described how eggs, good and bad, appear before the candle and out of the shell, and enumerated their respective chemical and bacteriologic characteristics. The most recent bulletin (Jenkins, M. K., and Hendrickson, Norman: Accuracy in Commercial Grading of Opened Eggs, Bull. 391, U. S. Dept. Agr.) is concerned with the grading of eggs by sight, smell and taste. It has been obseved that some eggs have a higher bacterial content than others. For instance, it has been found that 8.7 per cent. of eggs with sound shells contain bacteria, and that 18.6 per cent. of eggs with cracked shells and 30.7 per cent. of eggs with leaking shells are thus contaminated. In the same way the percentage of eggs containing bacteria is less in eggs with clean shells than in those with dirty shells; and as a corollary it was found that the percentage of eggs containing *Bacillus coli* is the same for clean, cracked eggs as for whole-shelled, dirty eggs. The physical condition of an egg indicates to a large extent its state of preservation. The white of a strictly fresh egg is stiff and the yolk stands up firmly; as the egg ages, the white becomes thinner, the yolk flatter and the vitellin membrane weaker. Therefore, when a stale egg is opened this membrane frequently ruptures, and when such an egg is dropped on a plate the contents of the yolk flow into and through the white. Such an egg is called a weak egg, although when it acquires an odor the laity would refer to it as a strong egg. Fertile eggs almost invariably contain weak yolks. It has been found that these eggs appear before the candle to have whole yolks; but on breaking, the yolk mixes freely with the white. It is believed that such eggs are suitable for baking and cooking if their odor is normal and the white not green when the egg is broken. If, however, the seepage of the yolk is so advanced that it extends entirely through the white, the egg should be discarded. When viewed before the candle, a strictly fresh egg will be found to have the yolk located slightly above the meridian and symmetrical with the long axis of the egg. It is indistinct in outline and moves sluggishly as the egg is turned. As an egg ages, the yolk becomes more opaque and may settle against the lowest part of the shell, finally adhering. Such eggs are frequently harborers of bacteria, although the settling of the yolk is not in itself an indication of the fact that the egg contains bacteria; on the other hand, they are sufficiently suspicious not to be included in food products. Most eggs containing bacteria may be recognized by the odor. A weak egg, the authors believe, if it is decomposed to such an extent that it has a muddy white or a whitish streak in the yolk, should be discarded for food purposes. The bulletins are well illustrated with colored plates which will be of great service to those interested in determining the quality of the hen's product.

Presence of Food Accessories in Urine, Bile and Saliva

Muckenfus conducted some experiments to determine the presence of food accessories (vitamins) in urine, bile and saliva, and records his results in the *Journal of the American Chemical Society*, October, 1918. Nine pigeons with acute symptoms of polyneuritis on a diet of polished rice were treated by mouth with fullers' earth activated with from 950 to 1,750 c.c. of fresh filtered ox bile. Eight of these showed improvement while observed, two for five and six days, respectively. Four pigeons with acute symptoms of polyneuritis were given fullers' earth activated with from 4,150 to 6,000 c.c. of fresh filtered human urine. All improved greatly, three of them for five, six and eight days, respectively, one of these having been observed for twelve days before suffering a second acute attack. Three pigeons with acute symptoms of polyneuritis were treated with different samples of fullers' earth that had been mixed with 2,950 and 3,250 c.c. of the bile filtrate from the activated earth. Two improved and one grew worse. One pigeon with acute symptoms was given fullers' earth treated with 15,000 c.c. of the urine filtrate from the activated earth, but continued to grow worse. Three pigeons with acute symptoms of polyneuritis improved after treatment with fullers' earth, activated with 400 to 1,325 c.c. of fresh filtered human saliva. Simple preventive tests with saliva were negative. Four "control" pigeons, which acquired the acute symptoms of polyneuritis on a diet of polished rice along with the others mentioned, were not treated. All grew worse, three dying within a day. The conclusions of Muckenfuss were that the experiments indicate that the antineuritic vitamin is probably present in comparatively small quantity in clean, fresh, filtered bile from the gallbladder of the ox. This food accessory is also present in fresh filtered human urine in traces, apparently.

Chemical Changes in Oysters During Preparation for Market

Edward E. Smith, junior chemist of the Bureau of Chemistry, United States Department of Agriculture, in Bulletin 740 gives the results of an investigation to determine the amounts of ammoniacal nitrogen, amino-acid nitrogen, moisture, total solids, ash and sodium chlorid present in oysters under the various conditions through which they pass in ordinary commercial practice in oyster houses, and to ascertain the effect of washing and soaking in both chemical composition and physical condition of the oysters. The findings, in part, are thus summarized: A marked loss of oyster solids and of ash constituents occurs on washing oysters with fresh water. Oysters covered with water but not agitated are not appreciably affected by osmosis except in relatively long periods of time. Solution proceeds slowly, but amounts to a large percentage of the solids originally present in the course of two or three days. If oysters are agitated in fresh water either mechanically or by a blast of air, a large increase in volume occurs in a short space of time, amounting to as much as 35 per cent. in thirty minutes, and to as much as 50 per cent. in ninety minutes, believed to be due to osmotic action. When washed in water of the same salinity as that in which they were grown, no increase in volume occurs and the loss of nutrients is slight. In the average of all the experiments the ratio of osmotic loss of solids to actual loss is approximately 2:1; for amino-acid nitrogen, all of which is soluble, but which goes into solution slowly, the ratio is approximately 1:1, and for ash-forming substance, which is composed largely of soluble inorganic compounds, the ratio is approximately 1:2.

Medicolegal

Validity of Provisions Concerning "Patent" Medicines

(E. Fougera & Co., Inc. v. City of New York et al. (N. Y.), 120 N. E. R. 642)

The Court of Appeals of New York says that Sections 116 and 117 of the sanitary code adopted by the board of health of the city of New York provided that there should be no sale of "patent," or proprietary, medicines in the city of New York unless the names of the ingredients of every such medicine to which the therapeutic effects claimed were attributed, and the names of all other ingredients, except such as were physiologically inactive, should be registered in the department of health, etc. The argument was made that the ordinance was an arbitrary exercise of the power of government. The court does not think so. Its purpose and effect were well within the limits of the police power. The purpose was the preservation of the public health and safety. The form of protection was publicity. There must be disclosure of the truth to responsible officials, who would prevent or punish the sale of fraudulent or noxious compounds. If that is not a legitimate public aim, the court is at a loss to know where one may be found. It was not important that the ordinance failed to compel disclosure to all the world. Laws are not invalid because they fall short of the maximum of attainable efficiency. Disclosure to all the world might make the protection more complete, but it would also make the hardship more severe. Something less, therefore, had been enacted. Disclosure was to be made to the health officers of the city, and to them only. If fraud or other wrong was discovered, then, and then only, exposure would result. "No man has a constitutional right to keep secret the composition of substances which he sells to the public as articles of food" (*State v. Aslesen,* 50 Minn. 5, 52 N. W. 220). If that is true of food, it is even more plainly true of drugs. A danger exists, and the only question is whether the means of correction are appropriate. The court cannot say that the means have no relation to the end. The public health is safeguarded by disclosure to public officers charged by law with its protection. The court is not called on to approve the wisdom of the ordinance. It stops when it satisfies itself that it has a reasonable relation to the end to be attained.

It was said that the effect of the ordinance was to compel the dealers in "patent" medicines to give evidence against themselves, in violation of the constitution of the state. But, accepting as accurate the stipulation that the admitted object of the defendants in the enactment was to secure information on which to base prosecutions for violations of law, if in their opinion the facts disclosed in accordance therewith should so warrant, the result would not be much changed. The sale of medicines is a business subject to governmental regulation. One who engaged in it was not compelled by this ordinance to expose himself to punishment for any offense already committed. He was simply notified of the conditions on which he might do business in the future. He made his own choice. To such a situation, the privilege against self-accusation has no just application.

It was said again that prosecution might follow if any statement in respect of the curative action of the drug was false, and that to permit this was to inflict punishment for mere error of opinion. The court has no doubt, however, that the word "false," as used in the ordinance, meant wilfully false or fraudulent. If this construction was adopted, the objection vanished.

Nor does the court agree with objections based on a supposed conflict between the ordinance and the federal constitution. It was true that there were some requirements of this ordinance which merely repeated prohibitions of the Food and Drugs Act. If prosecution was attempted for the violation of those requirements as a result of any transaction of interstate or foreign commerce, the question would have to be determined whether the state could thus add to the penalties of the federal law. But such provisions, if they were assumed to be invalid, were separable from the others. The dominant scheme of the ordinance was disclosure of ingredients. That disclosure may be compelled, and the failure to make it, punished, without trespassing on the field which has been occupied by Congress.

But there was one objection to the ordinance which the court thinks pointed to a real defect, though one that amendment might correct, that the ordinance did not except existing stores of merchandise in the hands of druggists or other dealers who did not know the ingredients and could not state them. In that the board of health exceeded the powers delegated to it.

Hospitals and Negligence of Incompetent Servants

(Mikota v. Sisters of Mercy et al. (Iowa), 168 N. W. R. 219)

The Supreme Court of Iowa holds that, in this action to recover for the death of a typhoid patient who jumped from a window of the defendant's hospital, a demurrer was rightly sustained to the plaintiff's petition, which alleged, among other things, that the officers, agents and attendants of the hospital, knowing that the patient was likely to be seized with delusions and delirium, received and placed him in a room on the fourth floor without bars on the windows, and left him there alone, or in charge of incompetent attendants and nurses, and that his death was due to their negligence. The court says that all charities must be administered through human instrumentalities; these are simply the agencies employed in the distribution of the charity, and he who accepts the charity through the instrumentalities employed cannot complain of the manner of distribution, though in it he receives a hurt. On the theory that the defendant was not liable for the negligence of its servants in this case, the court thinks the demurrer to the plaintiff's petition was rightly sustained. It might be contended, however, that the plaintiff had brought the case within the claimed exceptions to the general rule, and had alleged negligence on the part of the corporation itself. But a careful examination of the petition disclosed that in no place did it affirmatively appear that the injury complained of was caused or contributed to by any negligent act of the defendant, by not using reasonable care in the selection of its servants, or that the injury was due to negligence in the selection of servants, as differentiated from the negligence of the servants selected. When the injury is traceable to the negligence of the servant, there is no liability. If the case rested on the negligence of the defendant in the selection of incompetent servants, then it should appear affirmatively that the injury was traceable to such negligence. Even an incompetent servant may be negligent, and if the injury is traceable to such negligence, and not to the incompetency, then there is no liability under the rule. A fair interpretation of the language used leads the mind to the thought that liability was predicated, not on incompetency on the part of the servants employed, but on the negligent manner in which they, whether competent or incompetent, discharged the duty assigned. Even though the court grants the exception, it does not find the case brought within the exception, and the general rule must prevail.

License Revoked for Illegally Prescribing Drugs

(Knoop v. State Board of Health (R. I.), 103 Atl. R. 904)

The Supreme Court of Rhode Island, in this case arising on an appeal, affirms the finding of the state board of health revoking the certificate of appellant Knoop that authorized him to practice medicine and surgery in the state of Rhode Island, because of his having illegally prescribed morphin and cocain for drug addicts. The court says that he continued to treat a number of these addicts, when he knew, according to his own testimony, that they did not desire to be cured, that they were getting drugs from other sources in addition to the amount prescribed by him, and had secured prescriptions for additional amounts from him on their false statements that they had lost a part of their weekly supply. He admitted that a better way of securing a favorable result would have been to require his patients to come to his office at frequent intervals, thereby giving him the power to observe their conditions and control the size of the doses. His reason for not requiring this of his patients was that some of them were poor and that any such requirement would result in his losing his patients. But however well founded this fear may have been, it could hardly be urged seriously as a good reason for a failure to apply the method of treatment that was required. Moreover, before he went away for a vacation of a couple of weeks, in the fall of 1916, he filled out and signed a number of prescriptions for drugs, leaving a blank for the date in the month to be filled in when the prescripition was issued in his absence. These prescriptions were left with a female relative of his wife who was by arrangement to remain in his office and give the prescriptions to his patients if they called for them, and who then was to fill in the date on the prescription when delivered. This attendant had no medical training, and her only acquaintance with the patients was such as she may have acquired from having seen them in the office of the doctor at different times for a week or two prior to his departure.

That the appellant expected to cure his patients by such a course of procedure was incredible. That he did not expect to cure his patients was made clear by his own testimony, when he was recalled to the witness stand after other witnesses had testified in regard to his method of treatment. He then admitted that he did not expect to cure his patients, that the only practical way of effecting a cure would be by placing them under control in some institution, and that his object was to give his patients a sufficient supply of the drug to enable them to continue their usual occupations.

This particular testimony requires no extended comment. Such treatment for such an avowed purpose is illegal and unprofessional. One of the objects of the statute (Chapter 178 of the General Laws of 1909) is to prevent drug addicts from securing the desired drug and thereby enabling them to continue the drug habit. The legislature recognized the necessity of making some provision for these unfortunate people, and in a proper case the law permitted physicians to prescribe morphin, etc. Such treatment, however, must be in accordance with the recognized practice of medicine, the object of which, whenever it is possible, is to effect a cure.

Neither did the procedure followed by the appellant cure the patient, nor was it adapted to cure him. So long as the patient was able to procure his supply of the drug he would remain a drug addict. The treatment of the appellant was directed principally with the purpose of securing the fees which his patients paid him in order to secure the desired prescription, and the conclusion from the testimony was irresistible that whatever reductions were made in the amount of the drug prescribed were due more to a desire on his part to escape a prosecution for violation of the law than to any expectation on his part of effecting a cure of the patients or of securing for them any permanent benefit. The court is of the opinion that the appellant was guilty of grossly unprofessional conduct and of conduct making him an unfit person to practice medicine in Rhode Island.

Liability for Negligent Burning of New-Born Child

(Dalsgaard v. Meierding (Minn.), 168 N. W. R. 584)

The Supreme Court of Minnesota, in affirming a judgment for damages (amount not stated) in favor of a minor child named as plaintiff, calls the case not only an unfortunate, but a very unusual, one. The court says that the defendant on going to the Dalsgaard home, in response to a call, to attend Mrs. Dalsgaard in childbirth, found her sitting near the heater, and immediately put her to bed. He asked for a hot water bottle, and, being informed that they had none, he directed that some hot flatirons be wrapped, and these were placed at the patient's feet. Shortly thereafter the mother was delivered of the child named in this action as plaintiff. When the baby was born it did not breathe well, and to stimulate and start it breathing the defendant slapped it a few times, and then laid it back with its mother and placed a cover over it. Shortly the child began to cry vigorously. The mother remarked about the fact. The defendant raised the child up, but placed it back. The child continued to cry, and finally the defendant lifted the quilt and saw a flatiron against the baby's head. He removed the iron, and said to the parents: "It is no wonder the baby continues crying so long as the flatiron has become unwrapped and has slid against the baby's head." The right side of the face had been burned, the burn extending several inches above the ear and several inches below the lobe of the ear. The burn was deep, down to the skull. Later the upper rim of the ear sloughed off, and a part of the outer layer of the skull bone came out. The defendant testified that the mother moved about in the bed considerably during her labor, but remained practically quiet thereafter; that he paid no attention to how the irons were placed in the bed; that it was the continuance of the cry that caused him to raise the cover and discover the flatiron. It was claimed on the part of the plaintiff that, the defendant knowing of the presence of the hot flatirons in the bed, it was negligence on his part to have failed to look where he placed the child; that he should have considered that the motion of the mother during her labors was likely to interfere with the flatirons and cause them to become unwrapped and move toward the middle of the bed, where the child was placed, and that his duty as the physician in charge required of him to look so as to avoid the hot iron, and that his failure so to do was negligence for which he was liable. It was the claim of the defendant that the child was accidentally burned, without any fault or want of care on his part. It was also insisted on his behalf that the testimony in the case was insufficient to support the verdict. But this court is unable to say that the findings of the jury were not supported by the testimony. The trial court fully and fairly submitted the case to the jury, and their verdict was final. Physicians generally, as is their duty under circumstances as detailed in this case, look well to the surrounding conditions and to the welfare of their patients.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Jan. 15, 1919, 25, No. 1

Factors Involved in Formation of Filum Terminale. F. I. Streeter. Baltimore.—p. 1.
Ultimobranchial Bodies in Postnatal Pigs (Sus Scrofa). J. A. Badertscher, Bloomington, Ind.—p. 13.
*Origin of Phagocytic Mononuclear Cells of Peripheral Blood. F. A. McJunkin, Milwaukee.—p. 27.
Development of Arteries of Human Lower Extremity. H. D. Senior. New York City.—p. 55.

Origin of Phagocytic Mononuclear Cells.—For studying the phagocytic activity of cells, McJunkin uses lampblack, which he claims has an advantage over intra vitam stains, since the reaction is almost immediate. By showing that cells which have ingested carbon (3 per cent. mononuclear ones) completely disappear from the peripheral circulation within twenty-four hours, the failure of those employing intra vitam stains to demonstrate any considerable number of phagocytic cells in the blood is explained. Another advantage of lampblack over intra vitam stains is that thin paraffin sections may be made of the tissue fixed in a way best calculated to bring out the histologic structure. In such sections the limitation of the ingested carbon to the endothelial cells and mononuclear leukocytes assumes the character of a specific reaction for cells of endothelial origin. McJunkin believes that the demonstration of mitoses in endothelial carbon-containing cells lining capillaries which are not lengthening is proof of the origin of phagocytic mononuclear blood cells from the endothelial cells of vessels. That the 5 per cent. of phagocytic mononuclear cells present in human blood consists entirely of endothelial leukocytes seems likely to McJunkin in view of the fact that there is positive proof of this origin and negative evidence showing that they are not of myeloblastic or lymphoblastic origin and that few phagocytic cells of any variety are present in normal extravascular tissue.

American Journal of Public Health, Concord, N. H.

February, 1919, 9, No. 2

Democracy and Public Health. C. J. Hastings, Canada.—p. 81.
Future of American Public Health Association. L. K. Frankel, New York.—p. 87.
*Urgent Public Health Needs of Nation. R. Blue, Washington, D. C.
Health Problems of Foreign Born. W. H. Brown, Bridgeport, Conn.—p. 103.
Distribution of Vaccines and Serums by State Laboratories. C. A. Shore, Raleigh, N. C.—p. 106.
A Year's Changes in Food Habits. P. H. Bryce, Ottawa.—p. 108.
Isolation of Anthrax Bacillus from Shaving Brushes. J. P. Leake and A. Lederer, Washington, D. C.—p. 114.
Toll of Degenerative Diseases: Plan for Reduction. E. B. Fink, Chicago.—p. 120.

National Public Health Needs.—This article was abstracted in The Journal, Jan. 4, 1919, p. 66.

American Journal of Roentgenology, New York City

January, 1919, 6, No. 1

Mastoid Structures as Revealed by Roentgen-Ray Examination. I. Gerber, Providence, R. I.—p. 1.
Hydro-Pneumo-Cranium, with Air in Ventricles. H. E. Potter, Chicago.—p. 12.
Roentgenologic Contribution to Possible Cause of Hereditary Optic Atrophy. H. K. Pancoast, Philadelphia.—p. 17.
Roentgen-Ray Examination of Uterus. J. H. Edmondson, Birmingham, Ala.—p. 23.
*Ventriculography Following Injection of Air into Cerebral Ventricles. W. E. Dandy, Baltimore.—p. 26.
Improved Device for Accurate Localization of Foreign Bodies By Means of Roentgen-Ray. S. C. Barrow, Shreveport, La.—p. 36.
Practical Use of Wheatstone Stereoscope. H. C. Snook, New York.—p. 39.

Ventriculography.—Dandy has injected air into the cerebral ventricles at least twenty times. In some instances the injection has been repeated. The amount of air injected has varied from 40 to 300 c.c., the larger quantities in cases of internal hydrocephalus. Only once has there been any reaction, and in this case the injection (300 c.c.) was made forty-eight hours after the first stage of an operation for cerebellar tumor. All of the injections have been made in children varying from six months to 12 years of age. Invariably the lateral ventricle has been outlined sharply in the roentgenogram. In two instances the third ventricle and the foreamen of Monro were visible. In none, however, has the fourth ventricle of the aqueduct of Sylvius been observed. The practical value from pneumoventriculography is expected principally from the shadows of the lateral ventricles. Even in the few cases here reported ventriculography was a means of diagnosing internal hydrocephalus in the early states. Not only the existence of hydrocephalus but its degree and the amount of brain destruction are at once evident from the ventriculogram. Without a ventriculogram, Dandy says, the diagnosis of internal hydrocephalus in children is frequently guesswork; with the ventriculogram the diagnosis is absolute. Other intracranial conditions may be diagnosed in this manner.

American Journal of Syphilis, St. Louis

January, 1919, 3, No. 1

Standardization of Wassermann Reaction. J. A. Kolmer, Philadelphia.—p. 1.
Id. C. P. Brown and J. A. Kolmer, Philadelphia.—p. 8.
Frequent but Neglected Evidences of Syphilis from Side of Nose, Accessory Sinuses, and Ear. H. B. Graham, San Francisco.—p. 26.
Neurosyphilis of Paretic Type. I. A. Darling, Warren, Pa.—p. 35.
*Fulminating Syphilid. J. B. Gooken, Hot Springs, Ark.—p. 52.
Two Unexpected Negative Wassermann Reactions: Lichen Planus; Epithelioma. D. W. Montgomery, San Francisco.—p. 54.
*Coagulo Reaction in Syphilis. I. Toyama, Philadelphia.—p. 60.
Plea for Greater Care in Early Recognition of Cerebrospinal Syphilis. C. F. Neu, Indianapolis.—p. 69.
*Value of Laboratory Diagnosis in Neurosyphilis. J. H. Larkin, and L. H. Cornwall, New York.—p. 76.
Criteria as to Cure in Syphilis. R. M. LeComte, Washington, D. C.—p. 106.
*Syphilis and Its Relation to Infant Mortality. P. C. Jeans, St. Louis.—p. 114.
Following-Up of Syphilitic Suspects. J. B. Clark, New York.—p. 126.
*Arsphenamin and Neoarsphenamin Plus Epinephrin. B. B. Beeson, Chicago.—p. 129.
Treatment of Syphilis at Out-Door Department, Toronto General Hospital. W. T. Williams, Toronto.—p. 139.

Fulminating Syphilid.—Gooken reports a case presenting secondary skin lesions, gumma of bone, gumma of lung, and hepatic-visceral involvement, simultaneously and within nine weeks of the appearance of the initial lesion and with the chancre still apparent. Along with this general acute infection the hirsute areas were spared, and both clinically and as far as the examination of the spinal fluid could show, the nervous system had been neglected by the disease. The infection was acquired from the wife, who herself offered no visible signs of the disease. It responded to antispecific treatment quite as readily as the milder manifestations of syphilis.

Coagulo Reaction in Syphilis.—A method is described by Toyama for determining the proper amount of calcium chlorid to be added to oxalate plasma for the preparation of cytozyme containing the smallest amount of thrombin. Of the different extracts of tissues used as antigen in the Wassermann reaction, Toyama says, the best for use as cytozyme in the coagulo reaction is a simple extract of human heart muscle prepared by extracting the tissue with alcohol for a period not exceeding four days.

Value of Laboratory Diagnosis in Neurosyphilis.—In 967 laboratory examinations made by Larkin and Cornwall of spinal fluids from a series of syphilitics with objective signs of nervous involvement, pathologic findings were present in 787, or 81 per cent. In view of the fact that approximately 20 per cent. of those suffering from neurosyphilis do not show pathologic fluids, they are of the impression that it is none too radical to assert that 30 to 40 per cent. of those infected with syphilis have foci in the central nervous system, and that these individuals are "potential candidates for one or other forms of neurosyphilis." From study of the laboratory findings of over 350 spinal fluids embracing some 1,500 examinations the authors are led to believe that there is a rather definite sequence in the appearance of pathologic changes in the spinal fluid. This sequence, though not invariable, is as follows: (1) increase in pressure, (2) increase in globulin, (3) abnormal colloidal gold curve, (4) pleocytosis, (5) positive Wassermann reaction. With certain limitations each of these factors has a value in differential diagnosis.

Syphilis and Its Relation to Infant Mortality.—The statistics reviewed by Jeans show that from 10 to 20 per cent. of adult males and about 10 per cent. of married women are syphilitic, and a minimum of 10 per cent. of marriages involve a syphilitic individual. Seventy-five per cent. of all the offspring in a syphilitic family are infected. In a syphilitic family 30 per cent. of the pregnancies terminate in death at or before the term, a waste three times greater than is found in nonsyphilitic families. Thirty per cent. of all living births in a syphilitic family die in infancy as compared to a normal rate of 15 per cent. in the same class. Probably 25 to 30 per cent. of clinically syphilitic infants die as a result of syphilis. But 17 per cent. of all the pregnancies in syphilitic families result in living nonsyphilitic children who survive the period of infancy. About 5 per cent. of the infant population is syphilitic. According to St. Louis vital statistics, 3.5 per cent. of all infant deaths are ascribed to syphilis.

Arsphenamin and Neo-Arsphenamin Plus Epinephrin.—The use of epinephrin in certain reactions following the intravenous injection of arsphenamin and neo-arsphenamin is discussed by Beeson. In a series of 500 intravenous injections of arsphenamin [using the diarsenol, arsenobenzol (Dermatological Research Laboratories, Philadelphia) and arsenobenzol (Billon brands)] Beeson has observed nitroid crises in approximately 3 per cent. Most of them occurred with diarsenol. He has seen a nitroid crisis appear with the first injection, so that the anaphylactic theory can not always be invoked. These crises have varied from a slight facial flushing with a feeling of fulness beneath the sternum or precordium to extreme redness of face, ears and neck with edema of the lips and tongue accompanied by marked air hunger and conjunctival injection. None of the patients exhibited syncope, but on three occasions marked prostration was complained of. All the injections were given in a dilution of 0.1 gram of arsphenamin to 25 c.c. of plain freshly bidistilled water. About seven or eight minutes was the average time consumed in giving a 0.6 gm. dose. Hence neither the concentration of the solution nor excessive rapidity of inflow were important factors. Beeson always adds 3 or 4 would seem that we have no unequivocal evidence regarding the occurrence of superfetation even in mammals other than man. Moreover, as far as man is concerned, the large amount of literature on the subject furnishes no cases more convincing than that of Calderini.[21] Most of them easily can be recognized, from the reports alone, as probable instances of twin pregnancy, in which one fetus died and then was retained until the birth of the other. Confusion is due largely to the fact that dead fetuses often are retained for a considerable period without showing very evident changes in form or gross structure. This seems to be due, in part at least, to retardation in the lytic processes in embryonic as compared with adult tissues, a phenomenon which has been referred to the slow postmortem development of acidity in embryonic tissues.

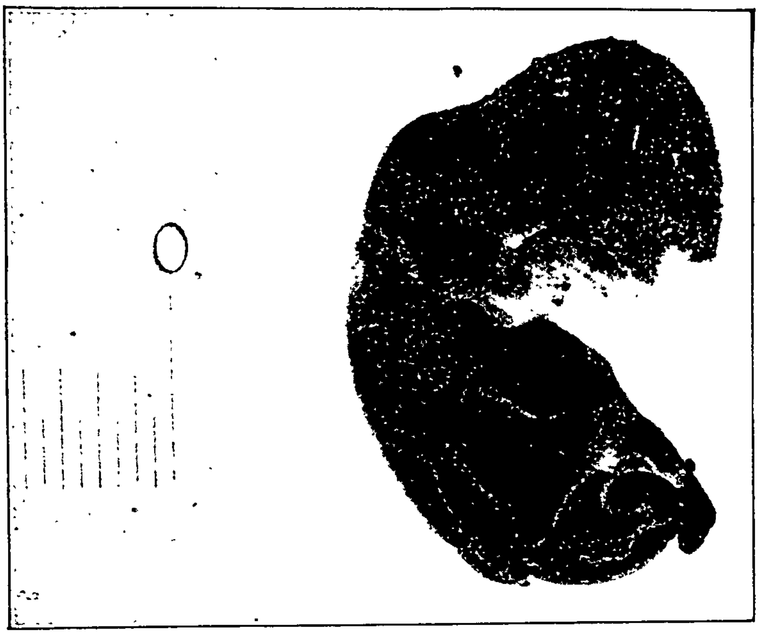


Fig. 8.—Pseudosuperfetus 1840 *b* from the Mall Embryological Collection, × 4; the maceration is very evident.

Since external form mainly is relied on as a criterion by the general practitioner, it is easy to see how misinterpretation of the facts arises, and it is significant that it is only the specialist who has come to doubt that supefetation ever occurs in human kind. This assumes, however, that by superfetation is meant the partly simultaneous intra-uterine development of two or more fetuses derived from ova liberated by independent ovulations separated from each other by a considerable period of time; or, in brief, the superposition of one pregnancy on another.

INSTANCES OF TWIN PREGNANCY

Since most reports on superfetation concern fetuses in the later months of pregnancy, it occurred to me that a representation of certain instances of twin pregnancy from the earlier months of pregnancy might be of special interest because such specimens could more easily and rightly be taken for examples of true superfetation. In the cases under consideration, one fetus evidently died some time before the abortion of both, a circumstance that resulted in considerable differences in age and form between the two. An examination of the accompanying cases will make it clear that all the instances here reported easily could be included among the alleged instances of superfetation found in the literature without doing the least violence to that literature. More than that, the instances here reported would form fine examples among such cases.

The youngest specimen contained in the Mall collection which came to my attention, and which might be regarded as one of superfetation, is No. 587, donated by Dr. F. A. Conradi of Baltimore. The cavity of the larger chorionic vesicle in the fresh specimen measured 32 by 23 by 23 mm., and that of the smaller about 6 by 6 by 9 mm. The latter was empty but the former contained a cylindric embryo 7 mm. long which Mall found greatly dissociated with a practically solid brain and only a remnant of the intestine. The amnion was present, and as shown in Figure 4, both vesicles formed a single mass which was covered by infiltrated decidua. That these chorionic vesicles both once contained an embryo, no embryologist will doubt. It is evident also that both were retained for some time after life and growth had ceased. The gross and histologic appearance of the entire specimen alone is sufficient proof of this. Although the smaller chorionic vesicle was incorporated in the margin of the larger, its death did not lead to its abortion or to that of the surviving twin. Yet the smaller of these twins undoubtedly died a considerable period before the larger. This is indicated also by an examination of the specimens and by the presence of decidua between the villi belonging to the respective vesicles at a point where they come in closest contact. An examination of this area shows that the ovum giving rise to the smaller conceptus was embedded independently, although undoubtedly also contemporaneously with the larger. Hence this specimen cannot be rightly regarded as one of superfetation.

The next specimens of twin pregnancy which might be regarded as a case of superfetation are Nos. 788 *a* and *b*, donated to the Mall collection by my friend, Dr. Anfin Egdahl. These twin chorionic vesicles, which were almost of the same size, measured 60 by 45 by 40 and 60 by 55 by 40 mm., respectively. Although of approximately the same size, the former contained a stunted embryo 17 mm. long, but the latter a nodular one only 3 mm. long. The differences in size and in the character of the two embryos are so marked that they prompted the late Professor Mall to make special inquiry of Dr. Egdahl as to whether these chorionic

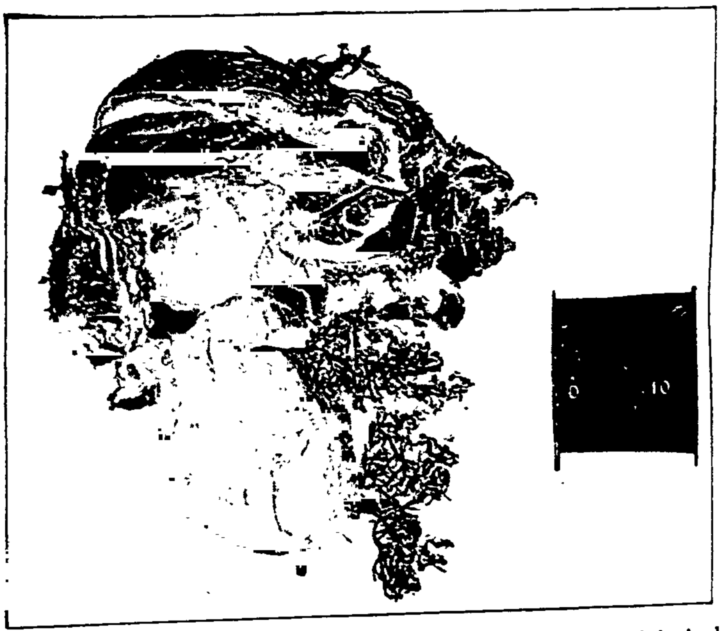


Fig. 9.—Everted chorionic vesicle of Fetus 1840 *a* below, and incised vesicle of 1840 *b* above, both forming a single mass.

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[21] Calderini, G.: Ueber einen Fall von Superfötation, Gynäk. Rundschau 3, 1909.

vesicles really were obtained from the same patient, as reported. This inquiry Dr. Egdahl was able to answer promptly and positively in the affirmative. Here we are again dealing with a case of twin pregnancy in spite of the fact that the size of the embryos might seem to indicate that we really have a case of superfetation under consideration. But that the case is not such is shown also by the fact that the chorionic vesicles practically are of the same size. The smaller abortus with a partially inverted chorionic vesicle containing the better preserved of the twins is shown in Figure 5. Figure 6 shows the appearance of the larger abortus, which contained the smaller nodular embryo only 3 mm. long. The latter is seen at a midpoint near the upper third of the illustration. Both illustrations are practically of natural size. The larger fetus, the external form of which was fairly preserved, had an approximate age of about 48 days, as estimated by the Streeter[22] curve. Mall noted that the organs could all be outlined, but that they were dissociated and that the mandibular region had fused with the skin of the thorax. The small nodule, which represents the only remnant of the embryo belonging to the larger chorionic vesicle, contains a large cavity with thick, fibrous walls. Nothing but epidermis and a remnant of the nervous system could be recognized.

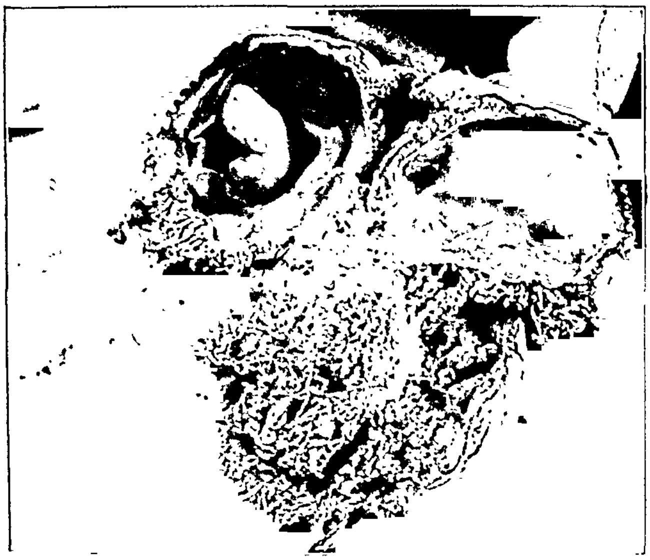

Fig. 10.—The same specimen as in Figure 9, showing the opposite side with the smaller fetus in loco.

A far more convincing instance of apparent superfetation was found in a specimen of twins donated by my classmate, Dr. Jane Ross of New York. The fetuses, Nos. 1840 *a* and *b*, contained in this abortus are shown in Figures 7 and 8. The larger measured 31 mm., but the smaller only 15 mm., indicating respective ages of 63 and 45 days. The chorionic vesicles belonging to these twins, which formed a single mass, are shown in Figures 9 and 10. The incised vesicle containing the smaller fetus is shown in Figure 10, and the larger vesicle, which is somewhat inverted, is shown in Figure 9. Since the latter had been opened and the larger fetus exposed, I at first overlooked the smaller fetus and found it only at a subsequent examination made for the purpose of determining the cause for the peculiar consistency and appearance of this portion of the abortus. The condition of the smaller fetus, which is well revealed in Figure 8 under a magnification of 4 diameters, is abundant evidence of the fact that it died a considerable period of time before the abortion occurred. This interval must have been several weeks. This specimen also nicely illustrates the fact that the death of one fetus does not necessarily result in the immediate abortion of it and its vesicle or of the other chorionic vesicle, as is sometimes still assumed.

Through the generosity of Dr. Gustetter I am also enabled to present reproductions of the fetuses spoken of in his article. They are shown in Figures 11 and 12, and from these illustrations it is clear that the smaller of the two fetuses probably stopped growth at about the sixth week. After this it became macerated and finally disintegrated, while the larger continued to grow, as in case of the specimen from Dr. Ross. The larger of these fetuses is practically normal in appearance except for the postpartum shriveling. It is approximately 100 days old.

Other specimens in the Mall collection, such as 2036 *a* and *b*, might well be included here, for one fetus was grouped as normal and the other as macerated. Indeed, it is a not very rare occurrence to find that the fetuses in a twin pregnancy had to be placed in different groups by Mall and his associates at the Carnegie laboratory. However, this was not done because such specimens were regarded as instances of superfetation, but because the fetuses, although of the same age, differed in form and appearance. It is interesting that Saniter[23] also reported a case of two unequally developed conceptuses from a tube. These conceptuses had separate chorionic vesicles, one of which was implanted in the isthmus and the other near the fimbria. The

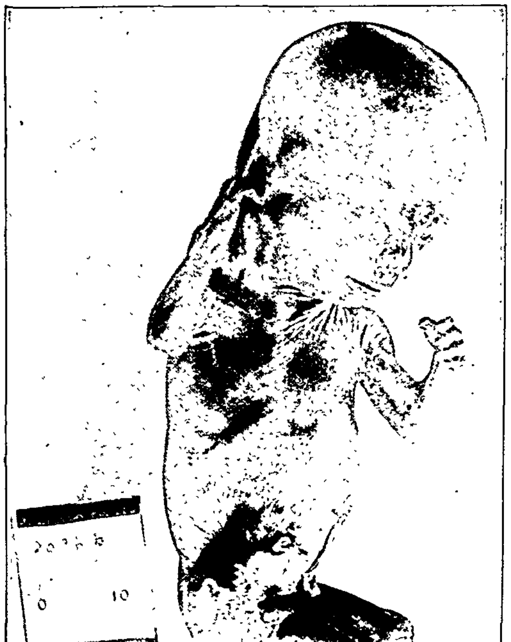

Fig. 11.—Pseudosuperfetus 2036 *b* from the Mall Embryological Collection.

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[22] Streeter: Unpublished data.

[23] Saniter: Ber. d. Ges. f. Geb. u. Gynäk., Berlin Centralbl. f. Gynäk. 27, 1903.

former was said to be only of the third to the fourth week, while the latter contained a fetus 4 cm. long. Both chorionic vesicles were said to have ruptured freshly. In commenting on this case of Saniter's, Werth[24] says that he regards the question as to whether it was a case of superfetation or merely one of twin pregnancy an open one.

It may be recalled that the occurrence of fetus papyraceus in cases of twin pregnancy also has been attributed in the past to superfetation. Moreover, as stated above, intra-uterine death of one or more fetuses belonging to the same litter is relatively common in some mammals. However, since Jenkinson[25] stated that the allantois and its blood vessels and also the syncytium are regularly retained at birth in some marsupials, to be absorbed later through the activity of maternal leukocytes, it is evident that one must use caution in judging on the basis of experience in other mammals, especially the lower ones. In some of these the conditions apparently are quite different from those encountered in man, and Strahl and Henneberg[14] pointed out that in the mole the entire placenta and membranes, as Hubrecht stated, often are retained for a month after parturition. No one would assert, to be sure, that the human uterus shows the same tolerance or the same resorptive power, yet the daily experience of physicians as well as the literature in obstetrics and gynecology is replete with instances of retention of the membranes or the entire conceptus long after the death of the fetus. Although the presence of a surviving conceptus in multiple pregnancy materially alters the intra-uterine conditions, it also would seem to predispose to retention rather than to hasten the expulsion of the dead mate. That is, the survival of one twin, especially in the earlier stages of development, may depress rather than enhance the factors that lead to abortion.

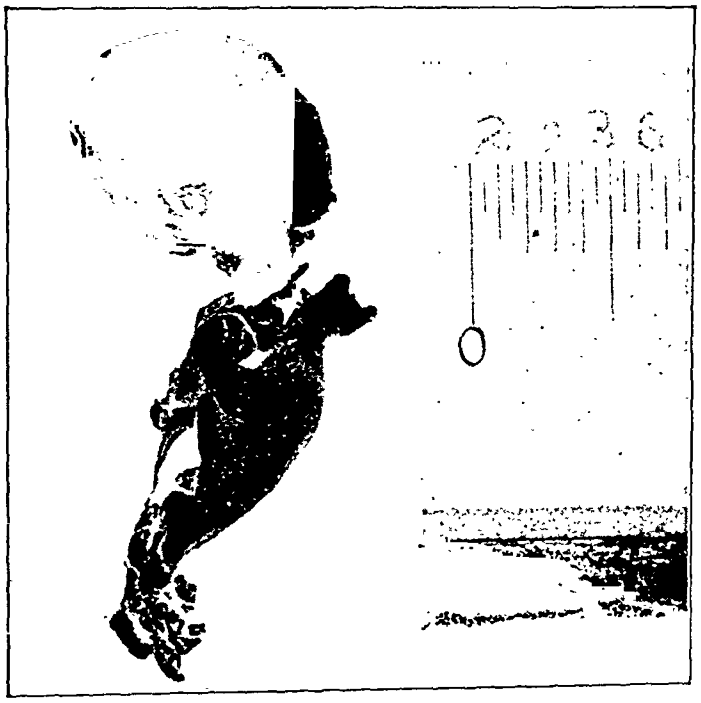

Fig. 12.—Similar specimen, No. 2036 *a*, from the Mall Embryological Collection; × 3.

The impulses arising from the presence of the dead fetus may be counterbalanced or offset for a time, at least, by the presence of the living fetus, and thus tend to prolong the status quo. This would be the case particularly, whenever, as in the specimen donated by Dr. Ross, the two chorionic vesicles are fused into a single mass; for then the portion belonging to the dead fetus, even if it forms one half of the combined mass at first, soon is outstripped in size by the surviving vesicle, which, in the absence of infection, may continue to grow quite undisturbed, for some time at least; and even in the case of infection of the dead vesicle, prompt invasion of the living does not necessarily occur. Aside from clinical experience, this was indicated also by the experiments of Maffuci[26] on incubating eggs and on pregnant rabbits and guinea-pigs. The apparent resistance of the young fetus to syphilis, the characteristic lesions of which have not as yet been successfully demonstrated in fetuses much before the first half of pregnancy, also would seem to point in the same direction.

CONCLUSION

From these considerations it would seem to follow that especially favorable conditions for the production of gross differences would seem to exist in some cases of twin pregnancy. Hence it need not surprise us that these differences have been largely responsible for the quite general belief in the occurrence of superfetation in women. But at present it remains merely a possibility; for the evidence on which this belief rests is wholly inadequate, and it is interesting to recall that in the past, fetus papyracei also have been regarded as examples of superfetation as illustrated by the specimens reported by Fasola.[27]

I gladly acknowledge my indebtedness to Prof. George S. Huntington for the cat fetus shown in Figure 2 and to Profs. Mary Harman and Albert Kunz and the Wistar Institute and the Modern Hospital Publishing Company for permission to reproduce illustrations from their publications.

EXPERIMENTAL MOSQUITO CONTROL IN RICEFIELDS

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During 1918, observations near Lonoke, Ark., extending over the entire rice-growing season from June to September inclusive, indicated the general prevalence of the following conditions:

1. *Anopheles* breeds within the rice fields in about equal quantities with *Culex*, both being found in moderate abundance.
2. Breeding occurs with fair uniformity over the entire field, with slight preference shown for the more open water along levees.
3. Breeding of both *Anopheles* and *Culex* begins ten days or two weeks after fields are flooded, and continues, with some variations, until late in September, when it diminishes gradually.
4. Top-minnows in the fields are to be found usually along the levees or at the water inlet, but rarely are they seen in midfield.

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[24] Werth, R.: Extrauterinschwangerschaft, Handbuch der Geburtshilfe von Winckel **2**, Pt. 2, Wiesbaden, 1904.

[25] Jenkinson, J. W.: Vertebrate Embryology, 1913.

[26] Maffuci, A.: Ueber das Verhalten des Embryo gegen Infectionen, Centralbl. f. allg. Path. u. path. Anat. **5**, 1894.

[27] Fasola, E.: Alcune considerazioni sopra tre gravidanza gemelle, Ann. di ostet. **9**, 1887.

5. Predatory insect larvae, principally *Hydrophilus, Dytiscus* and certain *Odonata* (damsel-flies), are usually abundant enough to constitute a probable factor in the natural destruction of mosquito larvae.

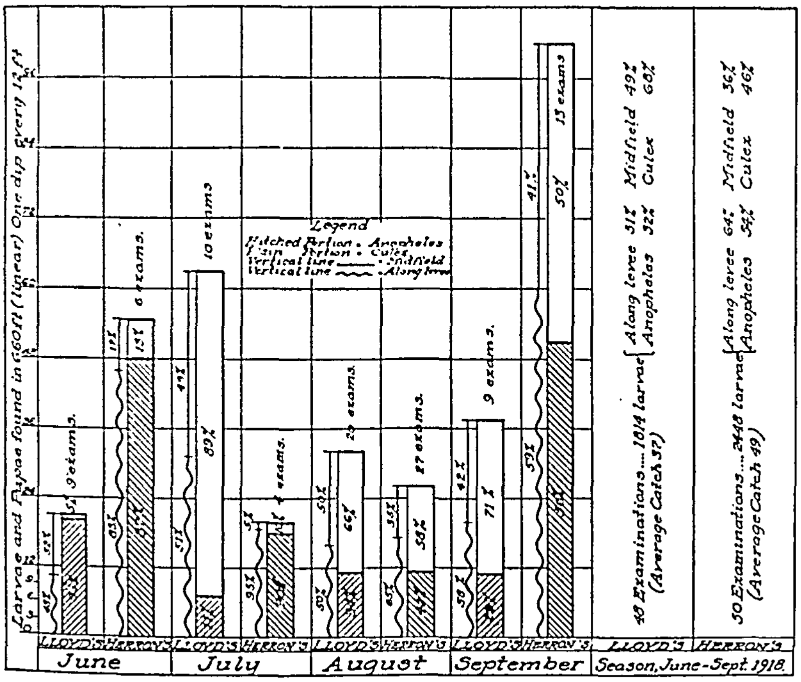


Chart 1.—Average larvae content, per examination, of rice plots while unaffected by remedial measures, by months. Each examination covers twenty-seven composite dips along the levee (330 ft.) plus twenty-seven dips in midfield, over like distance.

The foregoing observations are based on standardized and comparable examinations, forty-eight at one farm and fifty at another some miles distant. Essentially similar results were obtained at each farm, excepting that *Anopheles* outnumbered *Culex* at one farm, while the reverse was true at the other place. Also, at the first farm, total larval production was greater by about 29 per cent.

These examinations were conducted on ten small fields of one acre each, isolated by levees, but forming a part of a larger rice field, and being subject to the same treatment as regards seeding, watering, etc., as was this larger field. Frequent examinations were made of this large field, and of other near-by ricefields, and it was found that essentially the same conditions as to kind, number and distribution of mosquito larvae, and presence of fish and insect larvae prevailed here as were found throughout the season in the small fields under constant observation.

In view of the interest and great practical importance attached to *Anopheles* as a factor in the dissemination of malaria, it became desirable to know whether any practical application of remedial measures were possible in the ricefields, to the end that these vast, newly formed breeding areas might yield the minimum of malarial mosquitoes without interference meantime with the maximum yield of rice.

In considering any measures to reduce breeding of mosquitoes in ricefields, a vital factor is the presence of the rice itself. It is obvious that a ricefield cannot be drained in order to abolish mosquito breeding, nor can the water be treated with any larvicidal material that would endanger the rice crop. These restrictions with respect to treatment increase the difficulty of the problem in hand.

A further matter of importance is the item of expense involved. Any considerable addition to the present heavy expense of raising a crop would render a given remedy impossible of practical application by the rice farmers.

Keeping in mind the important factors of effective larvicidal action, no injury to rice crop, and cheapness and ease of application, investigations were undertaken to determine the practicability of employing certain measures to control mosquito breeding in the ricefields near Lonoke, Ark.

At each of two rice farms, five one-acre plots were used for this study. One plot at each place was reserved as control, no remedial measures of any kind being applied. On the remaining four plots at each farm, (1) fuel oil (technically known as "gas oil"), (2) "two-plus-one" oil mixture, (3) top-minnows (*Gambusia*) and (4) intermittent flooding, were the respective control measures applied. All five plots at each place bore the usual rice crop.

TECHNIC

1. The deeper water along the levee was examined by taking a composite dipperful every 12 feet for the length of the levee, or 330 feet, the dipper being filled by three or four partial dips taken while traversing the distance of 12 feet. After the number of larvae and pupae had been recorded, these were replaced in the field.

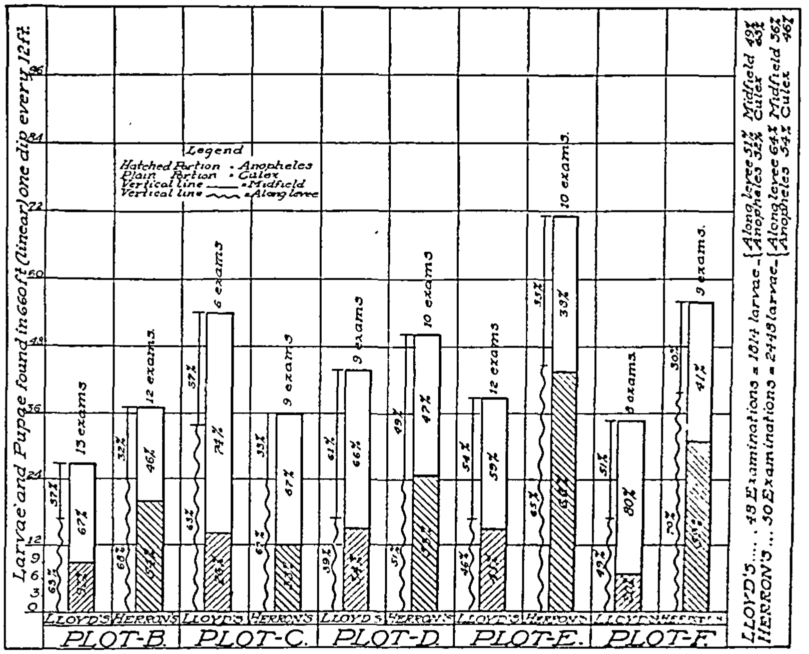


Chart 2.—Average larvae content, by plots, per examination (during the entire season), of the five plots while unaffected by remedial measures.

2. This procedure was repeated for a like distance, 330 feet, in midfield.

3. The total number of larvae and pupae thus found along levee and in midfield was regarded as the "catch."

4. Presence of other forms of life, both plant and animal, was noted and recorded. Beginning with August, definite count was kept of larvae of beetles, damsel-flies, etc.

Thus one examination of a plot included inspection of about *fifty-four* composite dipperfuls taken along levee and in midfield. together with observations as to the presence of aquatic insects and their larvae, also as to fish and crayfish, algae, and other aquatic plants, especially *Chara*.

In Table 1 is summarized the seasonal history of the several plots at Lloyd's farm. The forty-eight examinations here tabulated were taken at such times as the plots concerned were not showing the effects of remedial measures. The data are therefore fairly representative of conditions as they exist in the average ricefield.

TABLE 1.—BREEDING OF MOSQUITOES IN RICE PLOTS AT LLOYD'S, 1918, BY MONTHS, ALL PLOTS, B TO F, INCLUSIVE

	Along Levee				In Midfield				Totals for Plots			
	Anopheles I	Culex II	Total III	Insect Larvae IV	Anopheles V	Culex VI	Total VII	Insect Larvae VIII	Anopheles IX	Culex X	Mosquito Larvae XI	Insect Larvae XII
June—												
9 examinations	94	0	94	Present	88	8	96	Present	182	8	190	Present
Average	10	0	10		10	1	11		20	1	21	
July—												
10 examinations	41	282	323	Present	29	281	310	Present	70	563	633	Present
Average	4	28	32		3	28	31		7	56	63	
August—												
20 examinations	113	200	313	63*	112	222	334	57*	225	422	647	120*
Average	6	10	16	5	6	11	17	4	11	21	32	9
September—												
9 examinations	60	134	194	56	42	108	150	50	102	242	344	106
Average	7	15	22	6	5	12	17	6	11	27	38	12

* Only thirteen catches of beetle larvae.

TABLE 2.—BREEDING OF MOSQUITOES IN RICE PLOTS AT LLOYD'S, 1918, BY PLOTS, JUNE TO SEPTEMBER, INCLUSIVE

	Along Levee				In Midfield				Totals for Plot			
	Anopheles I	Culex II	Total III	Insect Larvae IV	Anopheles V	Culex VI	Total VII	Insect Larvae VIII	Anopheles IX	Culex X	Mosquito Larvae XI	Insect Larvae XII
Plot B—												
13 examinations	76	142	218	56*	39	92	131	43‡	115	234	349	99*
Average	6	11	17	9	3	7	10	7	9	18	27	17
Plot C—												
6 examinations	63	138	201	8†	21	104	125	8†	84	242	326	16†
Average	11	23	34	4	4	17	21	4	14	40	54	8
Plot D—												
9 examinations	55	102	157	12‡	81	157	238	15‡	136	259	395	27‡
Average	6	11	17	2	9	17	26	3	15	29	44	5
Plot E—												
12 examinations	82	128	210	28‡	109	148	257	16‡	191	276	467	44‡
Average	7	11	18	6	9	12	21	3	16	23	39	9
Plot F—												
8 examinations	32	106	138	15§	21	118	139	25§	53	224	277	40§
Average	4	13	17	4	3	15	17	6	7	28	35	10

* Six catches only. † Two catches only. ‡ Five catches only. § Four catches only.

In Table 2 the same data are grouped by plots, to facilitate comparative study of the several units concerned.

In Table 3 will be found the seasonal history shown by fifty examinations of the plots at the Herron farm, and in Table 4 the same data arranged by plots, for comparative study.

In Chart 1 is shown graphically the average catch at each farm during the several months of the rice season. The totals; the proportion of *Anopheles* to *Culex;* and the relative catch along levees and in midfield, are also shown. In Chart 2 the same data are arranged by plots. Charts 3 and 4 show seasonal fluctuations of larvae in all plots, and the effects of remedial measures used.

FUEL OIL ON LLOYD'S FARM

Application.—Rice was from 18 to 20 inches high, and in the stooling stage, when fuel oil was applied by a drip-can placed 5 feet above the water surface at the entrance gate. Oil at the rate of 30 gallons per acre was delivered to the water as it passed through the gate to flood the plot.

Distribution.—The spread of oil film was unsatisfactory. Continuously opposed in its progress by the rice stalks, most of the oil remained for several days puddled to some extent *within 20* feet of the drip, and only after a week or more was an oil film perceptible 150 feet away.

Effects.—1. On Rice: Wherever much oil came in contact with rice, the stalks were "climbed" and discolored, and some were killed. No injurious effects were observed when only a thin film of oil was present.

2. On Mosquito Larvae: Larvae were killed wherever the oil film penetrated. Results were immediate near the drip, but were delayed elsewhere, because oil did not spread. Near the drip the oil apparently remained effective for about four weeks.

FUEL OIL ON HERRON'S FARM

Application.—The rice was about 3 feet high, and was beginning to blossom. The oil was applied by means of broadcasting oil-saturated sawdust, one bushel of sawdust absorbing about 3 gallons of oil. This procedure was for a twofold purpose: (1) to secure uniform distribution of the oil among the rice, and (2) so to apply this oil to the plot that the rice crop would not be injured thereby. The use of 26 gallons per acre, applied in this way, gave a uniform but thin film over the entire plot.

Effects.—1. On Rice: There were no injurious effects. The oil did not puddle, or climb the rice stalks.

2. On Larvae: The larvicidal action was immediate. Examination two days after application showed reduction of 85 per cent., and four days after application 74 per cent. reduction was noted. In eight days, the presence of minute larvae in large numbers indicated resumption of breeding.

In a second application nearly one month after the first one, 35 gallons of oil were applied by use of saturated sawdust. The results were highly satisfactory. The rice was not injured, and examinations of the plot four days, one week and two weeks after application of the oil gave wholly negative results as to the presence of larvae.

TWO-PLUS-ONE OIL MIXTURE ON LLOYD'S FARM

Application.—The rice was from 18 to 20 inches high and in the stooling stage. The oil (two parts of kerosene plus one part of black oil) was applied by a drip-can placed 5 feet above the water at the entrance gate. It was intended to apply 30 gallons per acre, but persistent clogging of the drip and puddling of oil in the rice made this impossible.

Distribution.—The spread of oil was very poor. Most of the oil apparently remained hopelessly puddled about 10 to 15 feet around the drip. Several days of very hot weather seemed to help matters, but the better distribution may have been due to the separating of the lighter kerosene from the heavy black oil in the mixture.

Effects.—1. On Rice: A few square yards of rice about the drip were killed, but no other damage was apparent. The rice stalks were not climbed or discolored.

TABLE 3.—BREEDING OF MOSQUITOES IN RICE PLOTS AT HERRON'S, 1918, BY MONTHS, PLOTS B TO F, INCLUSIVE

	Along Levee				In Midfield				Totals for Plots			
	Anopheles I	Culex II	Total III	Insect Larvae IV	Anopheles V	Culex VI	Total VII	Insect Larvae VIII	Anopheles IX	Culex X	Mosquito Larvae XI	Insect Larvae XII
June—												
6 examinations	253	20	273	+	36	18	54	+	289	38	327	+
Average	42	3	45		6	3	9		48	6	55	
July*—												
4 examinations	70	4	74	+	0	4	4	+	70	8	78	+
Average	18	1	19		0	1	1		18	2	20	
August—												
27 examinations	208	249	457	363	102	152	254	260	310	401	711	622
Average	8	9	17	13	4	6	10	10	11	15	26	23
September—												
13 examinations	442	336	778	198	224	330	554	184	663	666	1,332	382
Average	34	26	60	15	17	25	42	14	51	51	102	29
October†—												
3 examinations	30	62	92	36	14	6	20	32	44	68	112	68
Average	10	21	31	12	5	2	7	11	15	23	38	23

* All plots drained for two weeks to get rid of "rice root maggot."
† One examination each of three plots only — B, E and F (these data are omitted from Charts 1 and 2).

TABLE 4.—BREEDING OF MOSQUITOES IN RICE PLOTS AT HERRON'S, 1918, BY PLOTS, JUNE TO OCTOBER, INCLUSIVE*

	Along Levee				In Midfield				Totals for Plot			
	Anopheles I	Culex II	Total III	Insect Larvae IV	Anopheles V	Culex VI	Total VII	Insect Larvae VIII	Anopheles IX	Culex X	Mosquito Larvae XI	Insect Larvae XII
Plot B—												
13 examinations	171	149	320	232†	74	58	132	192†	245	207	452	424†
Average	13	11	24	19	6	4	10	17	19	16	35	36
Plot C—												
9 examinations	76	145	221	130‡	36	72	108	98‡	112	217	329	228‡
Average	8	16	24	19	4	8	12	14	12	24	36	33
Plot D—												
10 examinations	175	67	242	97‡	74	150	224	44‡	249	217	466	141‡
Average	18	7	24	14	7	15	22	6	25	22	47	20
Plot E—												
11 examinations	356	139	495	57§	106	150	256	62§	462	289	751	119§
Average	32	13	45	6	10	14	24	7	42	26	68	13
Plot F—												
10 examinations	225	171	396	80¶	86	80	166	80¶	311	251	562	160¶
Average	23	17	40	10	9	8	17	10	31	25	56	20

* This table includes the three October catches at Herron's which are not included in Charts 1 and 2.
† Twelve examinations. ‡ Seven examinations. § Nine examinations. ¶ Eight examinations.

2. On Larvae: These were killed wherever the oil film extended. After six days, larvicidal action was observed 50 feet away from the drip. Limited larvicidal action was indicated along the levee from 60 to 80 feet away, eight days after application. The results were not uniform or satisfactory, probably owing chiefly to poor distribution of the oil.

TWO-PLUS-ONE OIL MIXTURE ON HERRON'S FARM

Application.—A thick stand of rice was about 3 feet high and beginning to blossom, when 27 gallons of two-plus-one oil mixture were applied by means of saturated sawdust. The resulting oil film was quite uniform.

Effects.—1. On Rice: No damage resulted.

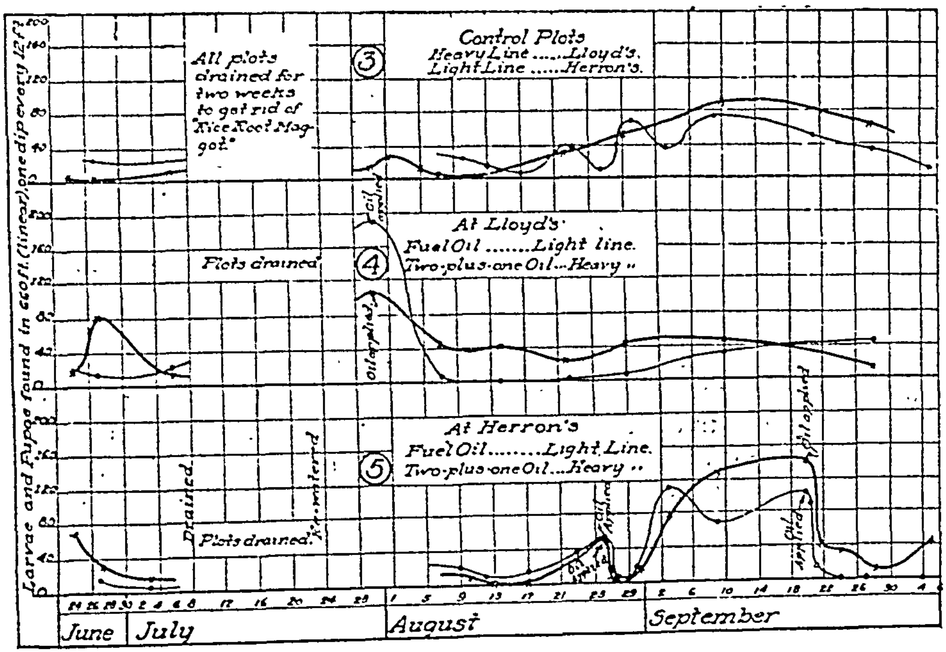
2. On Larvae: Larvicidal action was immediate and fairly satisfactory. The presence of very small larvae one week later indicated breeding but not production of sanitary importance. Very probably the amount of oil used was not sufficient for the best results.

A second trial of this oil mixture was made several weeks later. In this case "fuel oil" was substituted for the more expensive kerosene in the mixture. Thirty-three gallons were applied to one acre of rice, which was very thick and beginning to ripen. Distribution was effected by oil-soaked sawdust.

No damage resulted to the rice. Larvae were quickly and heavily reduced, but were not quite eliminated. Examination one week after application showed a reduction of larvae by 93 per cent. In two weeks, however, breeding had begun again, as shown by moderate numbers of very young larvae. This presence of very young larvae cannot be considered to be of sanitary importance.

TOP-MINNOWS (GAMBUSIA) ON LLOYD'S FARM

The rice was from 18 to 20 inches high and in the stooling stage when 1,400 top-minnows, obtained locally, were uniformly distributed by placing them at various points in the plot.



Charts 3, 4 and 5.—Larval history of plots showing effects of remedial measures (fuel oil and two-plus-one oil).

Distribution.—Although they were placed all over the plot, subsequent examinations indicated that practically all the minnows were along the levees (where the water was deeper) and especially at the entrance when the water was flowing on plot. They were rarely seen in midfield.

Effects.—Mosquito larvae showed a reduction of about 70 per cent. in one week. Subsequent weekly examinations disclosed the continuance of approximately these conditions for eight weeks, when examinations ceased.

TOP-MINNOWS ON HERRON'S FARM

The rice was about 3 feet high and partly in blossom when 800 top-minnows were distributed in the plot.

Distribution.—Subsequent observations revealed that these fish showed decided preference for flowing water near the gate, and for the deeper water along the levees. Only an occasional minnow was seen in midfield.

Effects.—The initial content of larvae was reduced by about 35 per cent. in two days, but in one week there was an actual increase of 85 per cent. This increased larval content continued with little change for nearly five weeks. However, most of the larvae that constituted the increase were so small that the fish could find them with difficulty or not at all. It seems evident that the efficiency of the fish cannot be justly measured by the relative abundance of these very small larvae, but that the practical absence of large larvae and of pupae is a truer indication.

INTERMITTENT FLOODING OF LLOYD'S FARM

A thick stand of rice about 20 inches high was on plot when water was first withdrawn in order to get rid of mosquito larvae. The water was drained into a large ricefield adjoining. The plot was reflooded within a week.

Effects.—1. On Rice: No effects were apparent.

2. On Larvae: Practically all larvae were removed as a natural result of draining the water into the adjoining field. It is not only probable that few were actually killed, but that, on the contrary, they continued to develop in the next field.

A small amount of water remained along the levees and in depressions of the plot. The common level of most of the land in the ricefields makes perfect draining impossible. A few larvae were to be found in these remaining puddles.

Eleven days after this plot was reflooded, larvae were again found in moderate abundance. This condition obtained until the plot was drained a second time, four or five weeks later.

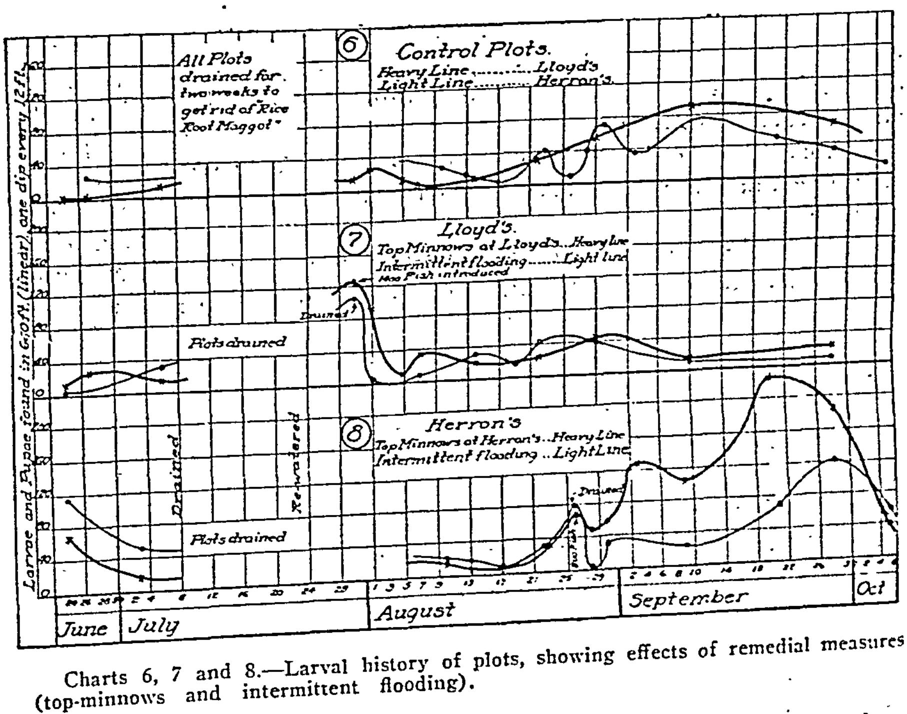
The second draining removed nearly all the larvae. The plot was rewatered within a week. No examination was made for two weeks or more, when larvae were again present, but not in large numbers.

INTERMITTENT FLOODING OF HERRON'S FARM

The rice was beginning to blossom when the water was drained into the large ricefield adjoining. A small amount of water remained in depressions in the plot. Water was again turned in after one week.

Effects.—1. On Rice: No effects were apparent.

2. On Larvae: Most of the larvae were removed, but the small amount of remaining water showed moderate numbers of larvae four days after draining.



Charts 6, 7 and 8.—Larval history of plots, showing effects of remedial measures (top-minnows and intermittent flooding).

Six days after reflooding the plot, a number of large larvae were found. These evidently had remained over, in the small puddles that could not be completely drained. Two and one-half weeks after reflooding, larvae were present in quantity. The plot was not drained, however, because the rice was "heading," and lack of abundant water at such a time would probably have resulted in serious injury to the rice.

The larval history of the control plots is shown in Charts 3 and 6 for comparison with the like history of other plots in which remedial measures were used (Charts 4, 5, 7 and 8). Examinations of these controls were made at the same time and in the same manner as of the other plots.

Unfortunately, conditions were not quite normal in the control plot at Lloyd's, owing to the presence of a heavy growth of filamentous algae during August and the first part of September which covered a considerable portion of the water surface and thus greatly reduced the surface area available for mosquito breeding. To this condition (which was not present in other plots) is probably due the relatively low content of larvae.

The control plot at Herron's was unfortunate also in the latter part of the season, when hogs broke the levee and caused the loss of water which could not be replaced at the time. To this the low count in September is evidently due. For some reason not apparent, other counts in this control plot were low, and showed heavy fluctuations (Chart 3).

SUMMARY

1. The average larval catch (in about fifty-four composite dipperfuls) at Lloyd's was thirty-seven, and at Herron's it was forty-nine (Chart 1).

2. *Anopheles* predominated slightly during the season in the Herron plots, forming 54 per cent. of the season's catch. *Culex* predominated at Lloyd's, forming 68 per cent. of the total catch of the season (Charts 1 and 2).

3. Breeding along levees, forming 64 per cent. of the total, exceeded that in midfield in the Herron plots, but at Lloyd's, breeding was about equal in the two locations (Charts 1 and 2).

4. *Anopheles* larvae were relatively most abundant in June and July. In the latter month, *Culex* gained ascendency in the Lloyd plots and retained the lead the entire season (Chart 1).

5. Insect larvae are relatively abundant, being nearly as numerous, in some cases, as are mosquito larvae (Tables 1 to 4).

6. Both the fuel oil and the two-plus-one oil mixture failed to spread through rice when applied by drip-can, but uniform distribution with satisfactory larvicidal action without harm to rice was secured by the use of oil-saturated sawdust.

7. Plot E at Lloyd's, containing 1,400 top-minnows, shows immediate reduction of larvae, with satisfactory duration of this good result. Plot E at Herron's, with 800 top-minnows, shows poor results apparently, but most of the larvae found were very small and may have escaped the fish only temporarily (Charts 7 and 8). In many of these experiments the practical absence of pupae and any larvae except small ones must be looked on as indicating effective control, and not in the light of production in public health quantities.

In the same plot, insect larvae were so few (relatively) as to indicate probable depredations by fish.

8. During the season, 129 examinations were made. These reveal the larval history for the entire season and are plotted in Charts 3 to 8, inclusive. Of these examinations, ninety-eight were taken when plots showed no distinct effects of remedial measures applied. Results are shown in Charts 1 and 2.

CONCLUSIONS

1. Intermittent flooding as a control measure is probably not feasible, owing to the additional cost of water and to the usual impossibility of the transferal of larvae beyond flight distance.

2. The preference shown by top-feeding minnows for the deeper, flowing water along levees and their evident avoidance of the midfield make them a doubtful control measure. Nevertheless, they have demonstrated under experimental conditions what has been observed under field conditions in Arkansas, Louisiana and California, that their presence means a considerable reduction in mosquito larvae.

Roadside ditches containing top-feeding minnows usually show larvae very few or absent. The ditch, however, is not comparable with the ricefield as an environment because of great differences in area, in abundance of obstructions for fish, and in amount of light.

3. Oil of the various varieties used in these experiments by drip-can methods proved a failure. The results obtained when used with sawdust are such that they offer future hopes for ultimate mosquito control in ricefields within reasonable flight distance of communities, and a corresponding reduction of incidence of malaria.

THE RELIABILITY OF THE NYSTAGMUS TEST *

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Bárány wrote in 1912 that in Vienna no examination of patients with nervous symptoms was considered complete without a careful examination of the vestibular apparatus. Even then the profession abroad had come to realize that a complete ear examination is a great aid in general medical diagnosis. In the United States we have similarly come to realize the usefulness of ear studies, and at present otologists are being called on for examinations of the vestibular mechanism. The usual method of examination of this mechanism is to set the lymph within the labyrinth in motion by means of turning or douching, and then measuring the responses obtained. These responses are nystagmus and vertigo. Examinations of a very large number of individuals—more than a hundred thousand—have shown that in normal persons the average duration of the after-turning nystagmus is 24 seconds. This duration of nystagmus then came to be considered as one of the expressions of the normality of the vestibular mechanism. With this standard as a basis, examinations were conducted in pathologic clinical cases for a number of years, and whenever the nystagmus varied considerably from the normal 24, the vestibular mechanism was considered proportionately affected. Deductions, in the matter of diagnosis and location of intracranial lesions, based on this standard, proved remarkably accurate, as verified by subsequent operations or necropsies.

When we entered the war it became obvious that the army would require a large number of aviators.

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* From the Medical Research Laboratory.

Realizing the arduous and unusual duties demanded of air pilots, every means was naturally adopted to insure the necessary high standard of physical qualifications; it was desired that the best physical material available be picked for this service. All the body mechanisms were carefully examined, such as the respiratory, cardiovascular, genito-urinary, muscular and visual, but in addition it was also deemed advisable in the case of prospective aviators to incorporate an examination of the vestibular apparatus, since such an examination throws light on the condition of the eighth nerve, medulla oblongata, pons, cerebellum and other portions of the nervous system, as well as of the ear itself as a motion-sensing organ. The degree of function of this mechanism could obviously be measured only by the responses obtained on stimulation. Nystagmus, being one of the important and the most easily measured of the responses, naturally received its share of attention in the examination of every candidate for aviation.

QUESTIONING OF THE RELIABILITY OF THE NYSTAGMUS RESPONSE

The reliability of the nystagmus response as a measure of function of the vestibular mechanism has recently come to be questioned, curiously enough not by otologists, but by certain learned and prominent psychologists. They promulgated the theory that persons subjected to considerable whirling or tumbling, such as acrobats and equilibrists, lost their nystagmus as a result of their training. When such a person was examined he would then probably show an impaired or absent nystagmus, which would therefore brand him as one having a subnormal vestibular apparatus, and hence unfit for aviation. This would mean a loss to the air service of the work of a very valuable man. Furthermore, they stated that fliers within the aviation service after having flown a considerable time would probably lose their nystagmus as a result of the whirling they were subjected to while in the air, and when reexamined would then be found below the required physical standards and taken off active flying.

This contention, that there is a suppression of the eye reaction in persons subjected to certain types of acrobatic exercises, would, of course, be a serious matter in the consideration of the examination of the vestibular apparatus from a general medical standpoint. If, for instance, patients on examination would exhibit a much shorter duration of nystagmus than the normal 24 seconds, it would naturally have no definite significance, since there was no telling how practiced the particular individual under consideration was in the matter of rotation. That is, he may have been fond of dancing or tumbling or what not.

This point of view may be summed up briefly, thus: A reflex reaction may disappear as a result of frequent repetition; this disappearance need not necessarily indicate a pathologic condition. Clinical medicine has for years relied on the permanency and constancy of reflex phenomena. Medical men have come to place a great reliance on the appearance or nonappearance of the knee jerk, the elbow jerk and the pupillary, Babinski and other reflexes. The assumption, therefore, that one may develop a tolerance and eventually fail to exhibit a reflex simply as a result of training is so contrary to the medical conception of the behavior of reflexes generally that it naturally became a subject of investigation at the Medical Research Laboratory at Mineola, L. I. The Otologic Department was particularly concerned in determining just how much reliability could be placed on the appearance or the nonappearance of nystagmus after stimulation, and just what effect continued practice would have on this interesting reflex.

RESULTS OF TESTS

Attention was first directed to the nystagmus reaction in fliers of varying experience. Flying generally, and stunt flying particularly, entails whirling to such a marked extent that any person who has flown thousands, or hundreds, of hours has certainly undergone more practice in whirling than most persons would undergo throughout the ordinary course of their lives. These examinations revealed uniformly that fliers of even 2,000 hours' flying experience continue to exhibit a good active nystagmus of the usual duration, approximately 24 seconds. Wherever possible these results were checked up with the nystagmus findings of the same persons at the time of their original examinations when they first entered the service, and in no instance was there found a reduction in the duration of nystagmus. We examined at Mineola 942 veteran fliers. The average duration of the nystagmus after turning to right was 24.8 and after rotation to left, 25.08 seconds.

TABLE 1.—VESTIBULAR EXAMINATIONS BY LEWIS

Subject	Occupation	Nystagmus Right, Seconds	Nystagmus Left, Seconds	Comment
L. L.	Whirling artist	26	24	
J. S.	Equilibrist	26	24	
C. G.	Balance equilibrist	25	20	
E. B.	Whirling artist	34	35	
I. D.	Tight and slack wire artist	28	33	
C. F.	Whirling dancer	29	31	
I. H.	Whirling dancer	27	28	
E. M.	Head balancer	34	31	41 yr. old, 20 years' experience
P. A.	Perch act	31	38	20 yr. old, 13 years' experience
C. A.	Perch act	21	24	28 yr. old, 13 years' experience
Mrs. S.	Whirling act	31	25	
Mrs. H.	Whirling act	22	24	
Mrs. S.	Aerial flying trapeze	17	18	50 yr. old, 30 yr. in circus
L. M.	Head balancer	37	30	18 yr. old, 9 years' experience
A.	Tight rope walker	26	26	
B.	Tight rope walker	26	26	
C.	Motordrome whirling racer.	22	24	26 yr. old, 6 years' experience
D.	Motordrome whirling racer.	26	26	23 yr. old, 5 years' experience
E.	Motordrome whirling racer.	26	26	26 yr. old, 6 years' experience
F.	Motordrome whirling racer.	8	8	24 yr. old

Not content, however, with the results of the examination at Mineola, similar investigations were conducted by trained otologists at the various other flying fields throughout the country, with identical results. Capt. Louis Levy,[1] M. C., an otologist unusually experienced in the method of conducting this special examination, reports the results of his personal examination of a consecutive series of 541 aviators, in which the average duration of the nystagmus after turning to the right was 24.6 seconds and the average nystagmus after turning to the left, 24.4 seconds. Lieut. Charles R. Brenner, M. C., another trained observer, reports sixty-three consecutive examinations of fliers, whose average flying experience is 128.4 flying hours. The average nystagmus after turning to right is 25.3 and after turning to left, 25.4.

All the foregoing findings in fliers are sufficiently convincing to have it definitely settled once and for all that army aviators do not lose their nystagmus as a result of the rotation and whirling to which they are subjected. Therefore, when a flier, who on admission had a normal nystagmus, is found at some later time to have a marked impairment of this reaction, it is due to some other cause than flying per se.

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[1] Levy, Louis: Vestibular Reactions in Five Hundred and Forty-One Aviators, J. A. M. A. **72**: 716 (March 8) 1919.

The usual statement that acrobats and whirling stage-dancers lose their nystagmus is not borne out by our investigations. We have examined numbers of such persons, and they uniformly show a normal nystagmus. Leut.-Col. E. R. Lewis, M. C., reports vestibular examinations of a number of such persons. The nystagmus observed is given in Table 1.

The average nystagmus in these whirling artists, turning to the right, is 26.1 seconds, and turning to the left, 26.05 seconds. These findings certainly suggest that the occupation of the subjects had no tendency whatsoever to diminish the duration of nystagmus. In fact, they exhibit normal reactions.

TABLE 2.—NYSTAGMUS REACTIONS AT MINEOLA

	E. L. B.		H. M. T.		R. H. B.		G. C. H.		B. B. J.		C. J. M.	
Date	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
9/26	26	28	24	28	..	..	..	..	..	..	..	..
9/27	22	26	20	28	..	..	..	..	..	..	..	..
9/28	24	25	26	25	30	33	40	37	26	34	27	27
9/30	27	23	25	27	..	..	..	..	..	..	..	..
10/ 1	25	24	27	22	29	33	..	..	..	..	33	25
10/ 2	27	24	22	25	40	31	38	36	28	31	27	27
10/ 3	22	20	21	20	25	29	24	30	34	30	22	23
10/ 4	22	21	18	21	..	..	..	..	..	..	20	19
10/ 5	21	20	21	21	..	..	..	..	..	..	23	20
10/ 7	23	19	20	23	29	29	31	30	..	..	20	21
10/ 8	21	20	..	..	24	29	33	30	..	..	23	21
10/ 9	22	23	20	22	25	26	31	34	..	..	24	24
10/10	25	21	24	23	29	29	32	34	..	..	22	22
10/11	16	20	18	21	27	28	30	33	31	31	24	23
10/12	20	21	24	20	22	24	30	30	28	29	23	20
10/14	23	21	18	24	..	..	32	28	22	26	23	22
10/15	20	16	20	22	22	21	30	32	26	30	21	19
10/16	..	..	19	22	25	21	23	27	30	33	22	24
10/17	..	..	24	27	28	26	31	30	..	..	22	23
10/18	..	..	25	21	27	32	26	25	27	30	24	19
10/19	..	..	24	24	21	22	25	..	25	25	..	..
10/21	..	..	20	18	19	21	27	25	25	24	23	23
10/22	24	19	21	22	22	28	..	..	30	30	19	24
10/23	22	21	22	28	20	22	33	29	20	21	18	21
10/24	16	19	21	24	..	..	23	32	23	21	17	19
10/25	20	19	21	23	19	23	24	23	20	23	..	..
10/26	30	28	..	..	25	31	34	27	24	23	25	24
10/28	26	24	22	23	21	23	..	..	24	25	22	25
10/29	18	19	25	27	26	28	34	34	..	..	25	28
10/30	22	23	25	25	28	26	28	29	28	27	23	22
10/31	22	27	28	26	24	28	30	20	22	25	..	..
11/ 1	..	..	19	23	25	24	30	28	25	26	26	29
11/ 2	..	..	..	..	..	..	..	..	..	..	..	..
11/ 3	..	..	20	22	25	24	23	27	27	27	26	25
11/ 4	..	..	27	26	27	28	26	28	26	25	..	..
11/ 5	27	26	24	23	25	28	32	33	30	29	30	30
11/ 6	..	..	25	23	..	..	30	26	25	27	27	29
11/ 7	..	..	20	19	26	29	27	21	31	30	23	21
11/ 8	27	26	29	28	26	28	..	..	..	..	21	19
11/ 9	25	22	22	24	35	37	29	26	31	28	27	26
11/11	30	30	24	30	..	..	30	28	36	28	25	22
11/12	25	27	24	24	30	38	29	26	30	28	24	21
11/13	20	23	25	21	..	..	36	30	32	34	27	25
11/14	26	28	..	..	32	30	29	27	29	30	26	28
11/16	25	26	26	24	..	..	30	27	25	27	24	23
11/17	..	..	..	..	..	..	30	27	..	..	..	..
11/18	23	24	26	28	..	..	31	30	27	26	25	22
11/19	21	22	22	26	..	..	..	..	28	27	26	22
11/20	24	25	..	..	..	..	28	28	28	26	..	..
11/21	30	30	24	23	..	..	34	29	31	32	25	24
11/22	26	27	22	21	..	..	30	25	31	29	21	24
11/23	..	..	..	..	..	..	..	..	..	..	25	23
11/26	..	..	25	21	..	..	30	26	30	26	24	21

L. E. E.

	Right		Left			Right		Left	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.
9/26	26	26	20	19	10/19	18	..	18	..
9/27	30	24	28	18	10/20	18	20	20	20
9/28	30	..	26	..	10/22	25	26	26	27
9/30	31	25	28	25	10/23	20	16	19	20
10/ 2	24	24	22	30	10/24	22	20	21	20
10/ 3	27	24	31	26	10/25	17	18	15	20
10/ 4	..	23	..	20	10/26	28	..	25	..
10/ 5	22	..	16	..	10/28	19	21	25	23
10/ 7	20	..	23	..	10/29	23	30	25	27
10/10	25	21	26	19	10/30	26	21	23	25
10/11	24	22	19	19	10/31	20	24	24	20
10/12	23	..	21	..	11/ 3	21	..	22	..
10/14	24	21	19	21	11/ 4	28	..	24	..
10/15	20	21	21	19	11/ 5	18	24	20	23
10/16	20	20	19	16	11/ 8	28	28	29	23
10/17	24	29	23	23	11/ 9	26	..	28	..
10/18	22	17	19	16					

J. O. F.

	Right		Left			Right		Left	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.
9/26	23	22	21	20	10/26	20	..	20	..
9/27	20	22	24	28	10/28	21	22	21	20
9/28	23	..	17	..	10/29	19	17	18	16
9/30	21	20	19	18	10/30	20	19	21	18
10/ 1	19	19	17	18	10/31	25	22	19	19
10/ 2	20	18	18	18	11/ 1	21	17	18	16
10/ 3	19	21	18	19	11/ 3	19	..	20	..
10/ 4	20	21	21	19	11/ 4	20	19	19	18
10/ 5	19	..	18	..	11/ 5	22	19	19	18
10/ 7	20	21	20	18	11/ 6	22	..	20	..
10/ 8	23	17	19	17	11/ 7	24	..	21	..
10/ 9	17	21	19	20	11/ 8	21	21	20	22
10/11	18	19	21	17	11/11	21	26	18	20
10/12	21	..	19	..	11/12	27	26	25	20
10/14	21	19	20	19	11/13	21	..	19	..
10/15	20	22	18	23	11/14	19	..	19	..
10/16	19	19	19	19	11/16	21	..	20	..
10/17	22	20	21	18	11/18	20	..	21	..
10/18	24	18	19	16	11/19	21	..	20	..
10/21	19	20	19	18	11/20	22	25	19	20
10/22	21	18	19	21	11/21	19	..	19	..
10/23	21	20	19	21	11/22	24	21	20	20
10/24	22	18	17	17	11/25	23	..	20	..
10/25	23	..	19	..	11/26	20	..	19	..

O. M. L.

	Right		Left			Right		Left	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.
9/26	26	24	26	26	10/25	15	..	16	..
9/27	25	24	27	20	10/28	19	16	18	18
9/28	24	..	22	..	10/29	19	19	18	20
9/30	23	27	21	22	10/30	21	20	20	20
10/ 1	25	..	23	..	10/31	24	23	24	23
10/ 2	26	23	24	20	11/ 1	18	23	17	24
10/ 3	25	25	21	20	11/ 3	23	..	24	..
10/ 4	19	16	20	16	11/ 4	27	..	26	..
10/ 7	17	14	19	20	11/ 5	18	20	18	18
10/ 8	18	..	18	..	11/ 6	21	20	20	18
10/ 9	18	..	18	..	11/ 7	18	..	18	..
10/10	16	16	18	16	11/12	22	21	20	19
10/11	17	18	17	16	11/13	21	20	23	20
10/12	20	..	18	..	11/14	24	..	21	..
10/14	18	17	17	16	11/16	25	..	25	..
10/15	19	..	18	..	11/18	22	21	21	22
10/17	20	19	19	16	11/19	25	23	24	22
10/18	20	22	19	18	11/20	19	24	18	21
10/19	22	..	21	..	11/21	16	..	24	..
10/21	21	17	19	16	11/22	23	20	30	19
10/22	21	25	18	19	11/23	18	..	18	..
10/23	16	18	17	16	11/25	23	..	20	..
10/24	14	22	19	17	11/26	20	..	18	..

T. G. S.

	Right		Left			Right		Left	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.
9/28	25	..	20	..	10/28	27	24	24	23
9/30	26	25	23	22	10/29	22	24	21	29
9/31	26	..	25	..	10/30	26	25	28	29
10/ 1	29	..	21	..	10/31	29	27	27	24
10/ 2	28	28	19	24	11/ 1	21	17	21	..
10/ 4	19	25	18	21	11/ 4	29	28	26	26
10/ 5	18	..	20	..	11/ 5	31	27	27	24
10/ 7	23	26	16	17	11/ 6	21	29	28	30
10/ 8	20	16	18	16	11/ 7	26	..	21	..
10/ 9	19	20	21	20	11/ 8	27	26	22	24
10/10	21	25	24	16	11/ 9	25	..	27	..
10/12	22	..	19	..	11/12	26	..	22	..
10/14	19	17	18	19	11/13	26	27	22	28
10/15	21	22	18	21	11/14	28	26	24	24
10/16	22	25	19	15	11/15	25	..	24	..
10/17	28	26	25	21	11/16	30	..	27	..
10/18	23	18	23	19	11/18	28	..	24	..
10/19	19	..	24	..	11/19	24	25	26	21
10/21	19	18	16	19	11/20	27	23	23	20
10/23	17	20	18	18	11/21	25	29	25	21
10/24	24	24	19	18	11/22	30	..	25	..
10/25	20	20	17	18	11/25	25	..	20	..
10/26	27	..	21	..	11/26	27	..	24	..

TURNING-CHAIR TESTS

There was also started at Mineola a series of experiments in which persons were subjected to frequent rotation in the turning-chair so that it could be determined just what effect, if any, such frequent and continuous rotation would have on their after-turning nystagmus. This experiment was suggested to the otologic department by the report of a similar series of experiments carried out by a group of observers trained in the observation and study of psychologic phenomena. These psychologists reported that persons who started with a nystagmus of 24 seconds or more on being subjected to daily turnings for several weeks would show either a complete loss of the nystagmus reaction to turning or a marked diminution. Since these experiments were conducted by observers not experienced in this type of examination, and as no medical examination had been made to determine whether or not the subjects of their experiments were normal, the results could naturally not be accepted by otologists without corroboration. The Otologic Department of the Medical Research Laboratory at Mineola, therefore, saw fit to conduct a similar series of experiments. Ten adult persons were carefully selected and examined. The caloric test was performed, that is, each ear was douched with cool water. They were also examined in the turning-chair, and in addition the galvanic reactions were taken. In this manner it was determined that they were absolutely normal. Six of these subjects were turned to the right and left daily. Four subjects were turned in the same manner twice daily. Two subjects had many additional turnings, as much as 440 rotations in one day. The results of the nystagmus reactions in these cases are given in Table 2.

Throughout these tests it will be observed that now and then a day was skipped. This could not be avoided, since all of these subjects were enlisted men who because of other duties occasionally could not appear for the examination. These lapses, however, were so rare—about one day in seven—that they certainly have no effect on the findings. These records clearly indicate that:

1. Not a single subject has lost the nystagmus.
2. Not a single subject has shown even a marked impairment of the nystagmus reaction.

Careful analysis of these findings discloses that there appeared a slight reduction in the duration of nystagmus after two or three weeks of turning in *some* of the cases. Even this apparent shortening of the duration of nystagmus, however, was rather an increased proficiency of those subjects in "gaze fixing" than actual lessening of the stimulus. The daily practice of fixing the gaze at a distant object, which was required of them after each test, taught them the art of holding the eye more or less fixed voluntarily, so that the nystagmic excursions became smaller. That this was produced by training, resulting in an increased fixation control of the voluntary eye movements, and not the result of a change in the character or intensity of the vestibular stimulus, is suggested by the fact that it occurred only in a few subjects—in those more apt. Furthermore, it was demonstrated that placing a pair of plus 20 degree planoconvex lenses in front of the eyes of those subjects immediately brought back the original duration of the nystagmus. Observation of the resulting nystagmus made *behind* those lenses as well as *through* them confirmed beyond question that there was no real reduction of the duration of nystagmus following these experiments. Further turning, for three or four weeks, in which the convex glasses always were used, revealed no reduction whatever in the duration of nystagmus.

As stated, all the subjects received a complete examination of the vestibular apparatus before these experiments were undertaken. This examination included turning, douching and electrical stimulation. On the completion of the experiments—after nine weeks of daily rotation, another complete examination was made, and the findings on douching and from electrical stimulation gave results identical with those obtained on the very first examination. This simply furnishes additional evidence that the eye response to vestibular stimulation was not altered in these persons.

This finding is particularly interesting in the consideration of the relation of eye responses in their bearing to medical diagnosis generally. The fact that such a prodigious amount of whirling stimulation did not affect in the slightest degree the responses, obtained by douching, seems to confirm the principles long recognized in otologic practice. It emphasizes once again what perhaps was not quite clear to some observers: that impaired nystagmus after ear stimulation must be considered as the direct result of pathologic impairment of some of the nerve pathways that conduct the impulses from the ears to the eyes.

CONCLUSIONS

1. The duration of after-turning nystagmus is not impaired by flying. Such a very large number of aviators have been reexamined as to make this conclusion absolute and final.

2. From the evidence at hand, it would seem that in acrobats, whirling dancers, airdrome performers, and in athletes in general, there is no diminution of the nystagmus response. More examinations of such persons, however, would be necessary before any final conclusion should be drawn.

3. Repeated turning experiments on normal persons occasionally produce an "apparent" and slight shortening of the nystagmus, but that this is only apparent and not real is demonstrated by the convex glasses.

4. In medical practice, an absence or impairment of eye responses following ear stimulation definitely indicates a pathologic condition within the vestibular mechanism.

STREPTOCOCCUS HEMOLYTICUS IN WAR WOUNDS *

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The data presented herewith have been obtained in a study of the bacteriology of war wounds as seen in Base Hospital No. 43. We realize that studies made in a hospital in which the period of time from the incurrence of the wounds until their study is shorter may give an entirely different picture. However, we think that some conclusions of value may be drawn from the work here presented that may add to our general knowledge of the subject. A few of these patients came directly from the first aid dressing stations, some being seen with the original dressings intact. Many came later, while a considerable number had been transferred from other base hospitals.

This study includes 704 consecutive cases, in which 1,848 cultures were made from 985 wounds. Cultures were made of all wounds except very slight superficial lacerations. There was no selection of cases. With reference to the location of wounds, 48 per cent. were of the lower extremities; 26 per cent. of the upper extremities; 18 per cent. of the head and neck, and 20 per cent. of the trunk. Of those of the lower extremities 18 per cent. were with fracture and 82 per cent. without fracture; of those of the upper extremities, 33 per cent. were with fracture and 67 per cent. without fracture; of those of the head and neck, 18 per cent. showed fracture, while 82 per cent. were without fracture, and of those of the trunk, 10 per cent. were with and 90 per cent. without fracture. When seen the first time by a medical officer, 40 per cent. were designated as "serious" and 60 per cent. as "slight" (these data being taken from the field card). The average length of time from the incurrence of the wound until a culture was made was ten days, the shortest period being one day and the longest thirty-seven days.

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*From Base Hospital No. 43 (Emory Unit).

METHODS AND MEDIUMS

The first 130 cultures on ninety-seven wounds were made directly on blood agar plates. The method used was to place a small amount of the infected material on the plate and spread it over the surface by means of a bent platinum wire. Afterward incubation colonies resembling *Streptococcus hemolyticus* were transplanted to tubes of the same medium. In this series only 7 per cent. of positive cultures of this organism were found. Subsequently, after suggestions were received from the Central Medical Department Laboratory to the effect that Dunham's peptone, to which a small piece of fresh rabbit liver had been added, be used, the latter method was adopted and has been followed consistently. On account of the difficulty in securing rabbit liver we tried beef and human liver, which seemed to give the same results as the rabbit liver. The peptone was made up — 1, tubed in 5 c.c. quantities and then about 1 gm. of liver was added to each tube. This was then sterilized in the autoclave at 10 pounds for fifteen minutes. The liver turns dark, and there is a cloudy sediment which settles at the bottom of the tube, leaving the supernatant fluid clear. This medium was made up in large quantities and enough kept on hand at all times for a large number of cultures. On the arrival of a train bringing wounded, one officer and an enlisted man were placed at each surgical section with all material necessary to obtain smears and cultures from all wounds. In addition to taking the cultures, the clinical appearance of the wound was noted. When considered necessary, smears and hanging drops were made and examined in the operating room. In some very serious cases these investigations determined the course to be followed by the surgeon. But cultures were made for future confirmatory diagnosis. The cultures were made by means of sterile swabs introduced into the wounds and immediately inoculated into the liver peptone medium. These cultures were examined by the hanging drop and Gram's stain of smear at the end of six or eight hours. In some cases the streptococcus developed in from four to five hours in this medium. The hanging drop gives most valuable information at this stage. The cocci appear in long and short curved chains. We have not been able to demonstrate any motility of the chains of cocci. At the same time it may be determined what course to follow for the identification of other aerobes and anaerobes when original independent cultures were not made for anaerobes. A preliminary report from this study is submitted to the surgeon in charge of the case. All tubes showing growth are transplanted to blood agar plates. After incubation of the plates for from eighteen to twenty-four hours in the inverted position, isolated colonies with well defined colorless zones of hemolysis are picked and transplanted. For the further identification the methods adopted by the Medical Department of the Army were followed.[1]

GENERAL OBSERVATIONS

Of the total number of wounds, 24 per cent. were found to harbor *Streptococcus hemolyticus.* The clinical appearance of the wound gave no information as to the probable presence or absence of this organism. This was especially noted by Major Frank K. Boland, M. C., chief of the surgical service, and by other members of the surgical staff, as well as by members of the laboratory staff. Some of the wounds that appeared fairly clean would harbor this organism and would respond much more slowly to treatment than others apparently much more severely infected but which would clear up almost magically with the use of neutral solution of chlorinated soda (Dakin's solution). A further observation was that the bacterial count came down much more rapidly in those wounds in which *Streptococcus hemolyticus* was absent. Although these streptococcus wounds did not respond as rapidly as the others to Dakin's solution, no other method of treatment was found that was an improvement over this method. The early observation thus made with reference to the significance of the kind of bacteria contained in wounds led us to regard as of minor importance the bacterial count. In fact, the bacterial count, even when carried out with the most exact technic, can compare in no way with the bacterial cultivation of wounds. It is of some value in following the progress of the wound from day to day, but its use alone gives very little idea as to the kind of bacteria present. Thus a wound containing many harmless saprophytes may be closed successfully, whereas any wound showing a positive culture of *Streptococcus hemolyticus* should not be closed. Further, the number of smears suggesting the presence of this organism is much less than the number actually shown to be positive by culture.

In connection with this work, an investigation of the possible carriers of *Streptococcus hemolyticus* at this hospital was made. Of 308 medical officers and nursing personnel (nurses and orderlies), throat cultures showed 1.6 per cent. to be carriers. Of 600 patients, exclusive of those with respiratory disease, 5.2 per cent. were carriers.

MORTALITY

In the total series there were five deaths directly attributable to *Streptococcus hemolyticus* infection.

CASE 1.—A. B. had a multiple gunshot wound of the left arm. The severity of injury necessitated amputation at the evacuation hospital, 1 inch below the surgical neck of the humerus. *Streptococcus hemolyticus* was isolated from the stump on arrival here ten days after amputation. A blood culture was positive for this organism. Seven days later the patient developed a streptococcus meningitis, which proved fatal on the fourth day.

CASE 2.—J. K. had a multiple gunshot wound affecting (1) the face through both mandibular rami, (2) the left hand (penetrating), (3) the left foot (perforating), and (4) the right thigh (middle third, perforating). The patient recovered from initial shock. Wounds 1, 2 and 4 improved rapidly. Wound 3 showed, on culture, *Streptococcus hemolyticus.* Two weeks later a blood culture was positive for the same organism. The patient succumbed to septicemia sixty-nine days after primary injury.

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[1] Methods for the Isolation and Identification of the Streptococcus Hemolyticus, Adopted by the Medical Department, U. S. Army, June 1, 1918.

routine use of cathartics in a hospital is a reflection on the dietitian.

8. There is, of course, a special group of diseases, such as nephritis, diabetes, cardiovascular diseases, gastro-intestinal disorders, acute surgical cases, etc., which by general consent must be treated by special dietary therapeusis. The problem of meeting the needs of these patients does not ordinarily confront the mess administration, as such diets usually are and should be prescribed by the surgeons in charge, the mess personnel acting in a capacity strictly analogous to that of the hospital pharmacist.

PREPARATION OF THE MENU

The mere enumeration of these classes indicates the necessity of a variety of menus. In few hospitals is there sufficient differentiation. Perhaps the most frequent source of dietetic blunders is an attempt to feed the hospital corps men and patients together. In such cases practically always one class or the other is improperly fed. Even patients who are essentially normal are engaged in highly sedentary occupations and should be treated accordingly. The "regular" meals usually are sent to a considerable number of borderline cases. Among these are men whose digestive capacity is not equal to unlimited demands. There should, therefore, be a definite forbidden list which includes corned beef and cabbage, sauerkraut, fried bologna, and other sophisticated meats, fried cabbage, pickled pigs' feet, and other such indigestibles. All of these have been encountered in the patients' "regular diet" at one hospital or another. They should have no place in an institution where they are likely to reach men who may be harmed by them.

In some hospitals, physical conditions make it difficult to segregate patients and corps men. If the same kitchen and dining room are used for the two groups, they should be fed at different times and with differential menus. These are compiled with certain dishes, such as roast beef and potatoes, to be served to both groups. To patients whose caloric requirements are low, "light" vegetables—creamed celery, for instance—and "light" desserts are served; for the corps men whose requirements are high, such "concentrates" as beans, rice and bread pudding, are added to the meat and potatoes. Any competent dietitian can apply this system at length.

Military patients generally want to eat to repletion. They may be allowed to do so if the menus are properly designed. But appetite cannot be relied on for adequate regulation of consumption. Many eat merely for amusement. Feeding a man 3,600 calories, however, when he needs only 1,800 calories, is to waste food inexcusably. The menus should be so planned that food of bulk to fill an ordinary stomach will furnish only the proper number of calories. Stewed and fresh fruits, and the coarse vegetables should be utilized freely. The statement that "the men will not eat turnips, etc.," merely means that the hospital cooks are incompetent. The coarse vegetables are eaten with relish when properly prepared. In some hospitals the training of cooks is only half done. They should all have a "postgraduate" course in "cookery for the sick" to be given by the dietitian, such as the "diet cooks" usually have had.

Bed patients and ambulant patients cannot properly be fed the same meals. In some hospitals all bed patients except those on forced feeding receive the "light" diets. If the menus are properly written, this is a good practice.

The subacute febrile patients and convalescents mentioned in Class 6 should have menus planned especially for attractiveness, utilizing the greatest feasible number of "concentrates," such as ice cream, lima bean purée, lactose custard, etc. A common plan is to give these patients the "regular" diet supplemented by feeding between meals. This is at best a makeshift device. The planning, preparing and serving of such meals should be under the supervision of skilled dietitians. The situation presents problems that will tax both the scientific knowledge and culinary skill of the best of these.

Much useless expenditure of mental energy occurs in hospitals where new menus are worked out every day. A standardized set can be devised and used repeatedly. The individual menus, however, should not be repeated oftener than once in ten days. A regular weekly sequence of meals soon becomes very distasteful to those patients who are in the hospital for relatively long periods. When the interval is ten days, however, few detect the repetition. To insure wide utility, the basic items should be printed in heavy type, with substitutes indicated in smaller type, as in the accompanying dinner menu.

DINNER

TOMATO SOUP
Okra soup
Vegetable soup
ROAST BEEF
Mutton
POTATOES
Sweet potatoes
BREAD
Corn bread

SPINACH
Kale
Cauliflower
Cole slaw
RAISIN PIE
Bread pudding
Rice pudding
COFFEE
Tea

BUTTER
Gravy

The provision for substitutes makes the system elastic so that the menus can be adapted to seasonal and special conditions. Since the work does not have to be frequently repeated, it is practicable and desirable to indicate on the menus the amount of protein and the caloric value of standard servings of each item. To determine approximately the caloric and protein consumption of any patient or any ward becomes then a matter of simple arithmetic.

The practice in vogue in some hospitals of leaving the menu writing to the mess sergeants is scarcely defensible. These men are practically always incompetent to meet the special technical problems involved. The same may be said of men who have had only ordinary medical training. It is unfortunate but true that dietetics in the ordinary medical curriculum receives but scant consideration. Neither does experience in managing hotels fit one to prescribe diets for hospital patients. Hotel diets are better adapted to putting men in hospitals than to getting them out. Special knowledge of the theory of nutrition, the art of cooking, and of dietary therapeusis are needed. The best method of meeting the problem is to place the supervision of nutritional affairs in the hands of a surgeon well versed in the theory and practice of dietetics. But in most hospitals no such man is available. The next best plan is to place a good dietitian in charge both of compiling the menus and of supervising the preparation of food for all the patients.

METHODS OF SERVING AND THE ELIMINATION OF WASTE

There remain to be considered the problems of serving and the closely related problems of waste control. Food waste in the military hospitals has been observed to vary widely—from 0.4 ounce to approximately 2 pounds per man per day. The problem of controlling waste amounts to one of preparing the food properly and compelling all soldiers to refrain individually from wasting: low wastage follows from good cookery and good discipline. As an added factor, a certain amount of instruction in the best technic of serving is advisable.

Much unprofitable discussion has been devoted to the question of whether cafeteria line service or table service is better. By either system waste can be kept down to an insignificant amount, and very high waste has been seen under each. In this respect there is very little actual choice between the systems; but as a matter of maintaining a pleasant atmosphere in the dining room, skilfully administered table service is distinctly the better.

A common source of waste is the kitchen itself. Carelessness on the part of the cooks may result in spilling or burning foods. In hospitals where this occurs more than rarely the assessment of the wastage against the pay of the culprit, or in case he is not known, against the pay of the sergeant in charge, has a salutary effect approaching 100 per cent. in efficiency.

Careless peeling of vegetables, and especially of potatoes in the final stage after they have been through the peeling machine, is often encountered. The eyes have to be removed by hand; instead of using the point of the knife and removing a small bit, the common custom is to cut off a tangential slice thick enough to include all the eye. For such vegetables as carrots, and in hospitals that do not have a peeling machine for potatoes, curved (semicylindric) knives should be provided. Allowing bone to leave the kitchen before going through the stock pot is another source of waste, although one not frequently encountered. Using fat trimmings or rendered fat to stimulate a slow fire is an extravagant method in use by some cooks. This should be strictly forbidden. The fat should be used in the cooking to as great an extent as possible; any not thus used should be sold, preferably for food elsewhere. The use of good food fat for soap, as has been practiced in some institutions, is a "conservation" measure of dubious value. A skilful use of "leftovers" is essential to satisfactory kitchen economy. If the quantity in any given case is too small to serve as part of a dish for the whole mess, "side dishes" should be made for a few only. The leftovers, to insure palatability, should be "worked up" at once rather than allowed to accumulate.

Assuming that good food has been provided and properly cooked, the methods of serving play the predominant rôle in encouraging or discouraging waste. In case the cafeteria line service is used, alert, intelligent men should be placed in charge of the dispensing. They should not be allowed to forget that their efficiency is an important factor in the success of the service. Each man in the line, as he presents his plate, should be given an option as to whether or not he shall receive any particular viand. In all cases relatively small initial helpings should be served and dependence placed on rehelpings ("seconds") to insure that the men get as much food as they need. Bread should be cut in half slices, a half inch thick, and the men given an option as to how many of these shall be taken. In view of the wide variability of bread consumption by different individuals, it would be better in all cases to put the bread at least on the tables and allow the men to help themselves. Some mess officers do not favor the plan of serving half slices, on the ground that even with whole slices the bread wastage is low. They overlook the fact that when whole slices are served, many men will eat more bread than they want in order to get the small quantity they do desire. The waste is just as great when a man overeats as when he empties food into the garbage can.

The next necessity is the "clean plate" rule: "Take all you want, eat all you take." This does not apply to the inedible portion, but the so-called inedible portion is subject to some control. Fat should not be considered inedible. The man who does not care for fat should not have it put on his plate. Proper carving and proper serving meet this difficulty. In enforcing the "clean plate" rule, two factors are important. Better results are obtained when both cheerful cooperation of the men and good discipline are brought to bear. When a man understands that the amount of food in the world is very inadequate and that what he wastes some one else who needs it has to go without, he is generally willing to be careful. When human beings are starving to death by the thousands, food waste becomes a crime. This fact should be emphasized rather than the money saving idea. The soldier is not particularly impressed by appeals to save money for the government and thus keep down taxes. Good discipline, however, is also necessary for the ignorant, the vicious or the careless. The simplest and most effective method is to place a good sergeant in charge of the dining room and require him to see that all edible food is eaten.

By these methods edible waste can be kept below a half ounce per capita daily.

When table service is used, the same general methods apply. The essentials are good food, well cooked and properly served to well disciplined men. With table service the "food hog" may offer a special problem. He is the man who takes the most and the best of the dessert or of the meat without regard to the rights of his neighbors. This difficulty is usually seen in hospitals where discipline is slack. It is generally best to deal with each man directly and not let the habit spread. If the mess, however, has got out of hand, squad service should be established; that is, the men come to the dining room in small groups in charge of squad leaders, preferably noncommissioned officers, who are held personally responsible for proper service and for wastage.

A combination of table and line service in some situations is the most satisfactory, the meat and dessert being served to the men directly, and beverages, soup, bread and vegetables placed on the tables.

Cream and sugar for beverages should also be placed on the tables. No man can properly sweeten another man's coffee. The consumption of sugar is usually higher when the men help themselves, but not greatly so. At Camp Jackson it was found in line organizations to require 0.063 pound more per man per day when the sugar was placed on the tables. This adds about one-half cent to the daily ration cost. Attempts to save sugar in the mess generally result merely in the men's buying more candy at the canteen. Another phase of the problem is that sugar may be left undissolved in the bottom of the cups. Good discipline meets this difficulty easily. If the men get careless, penalize them by sugarless days. An occasional sporadic case may best be dealt with individually. For sanitary reasons it is best to use some sort of container from which sugar is poured instead of dipped. These can be obtained from the hotel supply trade, or can be improvised from baking powder cans by cutting a hole a half-inch in diameter in one side near the top of the can.

As to "cream," if, as is usually the case, condensed milk is served, there is no legitimate objection to its being used in beverages as freely as desired. Many patients do not get enough milk for their own good. Milk is the best source of calcium and certain vitamins. At least 4 ounces of condensed milk or 8 ounces of fresh milk should be used per man daily.

The most important source of waste in some hospitals is one that is hardly even suspected, that is, waste due to overconsumption of "concentrates." A large stomach full of roast pork, mashed potato, gravy, lima beans and raisin pie is for a hospital patient a very wasteful meal. The man who needs only 2,000 to 2,500 calories may and frequently does eat 4,000. This excess is truly waste and is also detrimental to the patient himself. Many mess officers are unduly impressed by the wishes of the men for a heavy meat diet. In addition to retarding convalescence, this is expensive. The food is a part of the treatment. The aim should be to cure and discharge the patient, not to render him unduly happy and contented.

WARD SERVICE

The foregoing principles can be applied in theory and largely in practice to ward service. The food should reach the wards in an attractive condition and should then be served to the patients without deterioration. Hot viands should be served *hot*, and cold *cold*. This does away at the start with an important cause of wastage. When to a patient whose appetite is capricious at best an unattractive, lukewarm conglomerate of lumpy mashed potato, stewed tomato and hash is served, there will be a great deal of garbage.

A high degree of individualized service is feasible. When physical and sanitary conditons permit, the food carts should be taken into the wards and each patient served individually. When this is not feasible, the food can be passed in the containers and the patients served directly. For that class of patients who need forced feeding but whose appetite is capricious, this system should not be used. Such patients should have meals prepared and served with special attention to attractiveness. To them the sight and smell of large quantities of food are often highly distasteful and may seriously interfere with nutrition, and hence prolong convalescence.

The first helpings should be small, such as the least rather than the most hungry man will want. These can be supplemented by rehelpings to any desired extent. In every case, bread in half slices, cream, sugar, salt and pepper should be passed separately. Generally there is nothing except ignorance or indolence to prevent a service so well adapted to individual patients that ward waste drops to a low figure. If the serving is properly done, the "clean plate" rule can be enforced to nearly as great an extent in the wards as in the dining rooms.

Ward serving needs especial supervision. Many nurses and attendants, if left to themselves, adopt the easiest way. An officer or dietitian should be placed in charge. Frequent inspections of the serving in each ward should be made. Any serious defects encountered should ordinarily be taken up with the ward surgeon who is primarily responsible for ward conditions.

All leftovers should be kept clean, and except in the case of contagious wards, should be returned to the kitchen. Allowing ward attendants or convalescent patients to stuff themselves with attractive leftovers is a fairly common practice, but one in which the involved waste is merely concealed.

The ward personnel should not be allowed to make surreptitious use of delicacies ordered ostensibly for the patients. Unless care is taken to prevent it, there may be a considerable waste of such materials as fruit juices, milk, cream and eggs. The rule should be adopted—and enforced—that no food or beverages except water be consumed in the wards by any one other than the patients at any time. Frequent check should be made on the amount of special commodities sent to the wards, and the issue of special meals or delicacies should be restricted to legitimate demands. A *laissez faire* policy along this line inevitably leads to abuses.

In supplying food to the contagious wards, special effort should be made to send only such quantities as are likely to be needed, since leftovers from these wards should not be returned to the kitchen.

In the larger hospitals in which there is frequent changing of the population in the wards, special methods are needed to keep the mess officer apprised of the dietary needs of each. The standard plan of requisitioning once daily is inadequate. At least supplementary reports of transfers and discharges from the wards are needed. In some hospitals, confusion would be lessened by systematically requisitioning about an hour before each meal. In one hospital studied, all meals sent to the wards in excess of the actual number of patients were charged to the surgeon at 25 cents each. The method seemed to be as effective as it was unpopular.

In some of the best hospitals, intramural publicity has been used effectively to keep down waste. The amount from each ward and each kitchen is weighed separately and recorded. Reduced to a per capita basis, it is then reported. The surgeon in charge of each ward, or the sergeant in charge of each kitchen, the waste of which is higher than the average, should be notified of that fact and urged to reduce it below the average. Each man thus in improving his own record aids in lowering the general average. This procedure, carried out for a few weeks, has been found materially to lower the garbage output.

SUCCESS UNDER DIFFICULTIES

Perhaps in no part of the military establishment has the attempt to spring to arms over night resulted in more trying conditions than in the hospital kitchens. Very few cooks, almost no mess officers with adequate technical training, and at first no dietitians were available. When the need became recognized, a considerable number of hotel managers patriotically offered their services, and they have done an invaluable work. A few well trained hospital mess sergeants were also available for promotion to commissions and also have been very valuable. More recently dietitians have come to play a large part in hospital messing. They have introduced technical skill in adapting dietaries to the nutritive requirements of the hospital population and have added an element of finish to the diets which have very materially improved conditions. Their lack of a definite military status has made large demands at times on their tact, and their success is so much the more to be admired.

EMPLOYMENT OF CALIPERS IN FRACTURES OF THE FEMUR

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In view of the extensive use to which the caliper has come, as introduced into general practice by Lieutenant-Colonel Besley, U. S. Army, I think it may be useful to put forward some observations in regard to the many points that have arisen. These observations are based on the study of about 300 cases, which I have been able to follow closely during the past year, and the casual observation of many others.

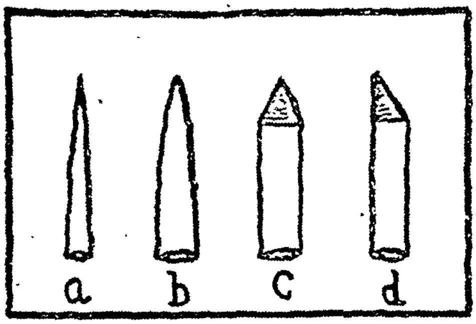

Fig. 1.—Various shapes of caliper points: *a*, long, thin and tapering; *b*, long, thick and tapering; *c*, short taper, concentric point; *d*, short taper, eccentric point.

It is my belief that in this instrument we have realized one of the benefits that go to justify the sacrifices made by so many splendid heroes. However, it can be misused, misapplied and abused. The outstanding virtue of the instrument lies in the fact that a direct force can be applied to the bone without damaging it and without penetrating its cortex. Penetration of the cortex means misuse of the instrument or some fault in construction.

The dictum of Thomas in regard to his splint applies equally to the caliper: "Do not try to modify the Thomas splint until you understand the use of the Thomas splint." Thus, as with so many Thomas modifications, we find the modified caliper inferior, as a rule, to the original.

PENETRATION

The question of penetration of the cortex depends on many factors. Chief among them is the actual shape of the caliper points. The point that is sharp and of a long, thin taper is the worst type. It presents a spearhead to the bone and is so constructed as to penetrate the maximum depth with a minimum pressure (Fig. 1). The relative length of the handle arm compared to the gripping arm is important. The longer the handle arm, the greater is the leverage in favor of penetration; and, on the other hand, the shorter the handle arm, the greater the likelihood of slipping due to insufficient grip.

In addition to the length of the handle arms, their pitch bears on the question of leverage; thus, a caliper whose handle arms diverge markedly gives greater leverage in favor of penetration than one in which the handle arms lie closer together (Fig. 2).

The arrangement of the cords at the handle ends has much to do with the grip pressure and therefore is important in considering the cause of penetration. The diagrams given in Figure 3 illustrate this and are the results of careful experiments. The force applied was in each case constant—8 kilograms—and acted in the long axis of the calipers. It was counterbalanced, but the lateral (grip) pressure was balanced by spring balances acting right and left from a fixed point to the respective arm. It will be seen that the grip pressure varied considerably and that the less the grip pressure the greater the spread of the points. From the series of experiments showing the variation in grip pressure with different spreads of the points (Fig. 4) it will be seen that with a constant type of cord fastening, the greater the spread the greater the grip pressure. Thus it follows that the influence on grip pressure of the type of cord fastening is even greater than appears in Figure 3. The pull as taken in Figure 3 *e* exerts sufficient grip pressure to prevent slipping, provided the handle arms are prevented from moving outward by a tie between the handle arms. Figure 5 shows the influence of an eccentric pull on grip pressure and also the rotation and sluing tendency produced by an eccentric pull. Figure 5 *d* shows that with eccentric traction the greater pull is exerted on the same side from which it is taken, not on the same solid crossed arm.

The position on the femur in which calipers are applied is important also regarding penetration. If the caliper is applied on the flat tuberosities of the condyles, where the cortex is thin and comparatively soft, the tendency is to facilitate penetration, while the higher on the shaft one goes, the harder, thicker and more like ivory the cortex becomes. On the sloping surface just above the condyles the surface of the bone is rough and not glazed, but very hard and thicker than directly over the condyles. Here is the place where a grip can be most easily obtained with the least inward pressure, for two reasons: The surface presented is almost at right angles to the direction of the caliper points, and it is rough and hard. It has the disadvantage of not being so near the skin as the tuberosities of the condyles; but to counteract this it has the advantage of not being directly beneath the ligamentous bands passing from the thigh to the leg, namely, the iliotibial band and the tendons of the long adductors and sartorius. Major Pearson has shown that these structures, when the knee is moved, tend to drag on the caliper points and may thus cause erosion and penetration.

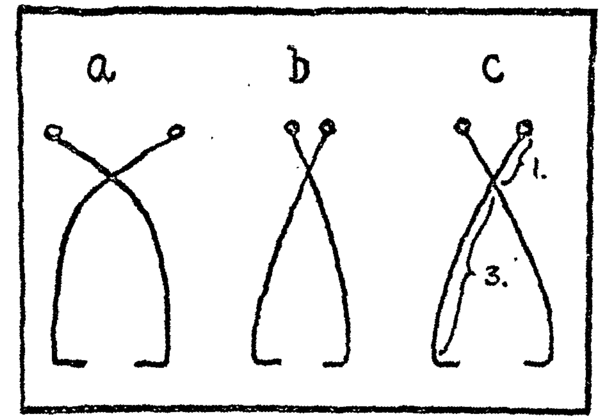

Fig. 2.—Length and pitch of handle arms: *a*, long, with obtuse angle; *b*, short, with very acute angle; *c*, good proportions, with acute angle and a leverage of 1:3.

In my experience it has never been necessary to bore small holes in the bone to receive the caliper points. This, it seems, tends to render penetration of the cortex more easy, since the most resistant part of the bone is the very outermost layer of the cortex. Boring this, then, gives the caliper point an excellent start and for this reason should not be done. Captain Preston advocates tapping the caliper points gently a little way into the cortex. However, by pushing with the hands the points will find sufficient grip to hold any necessary pull without slipping, provided other factors are eliminated.

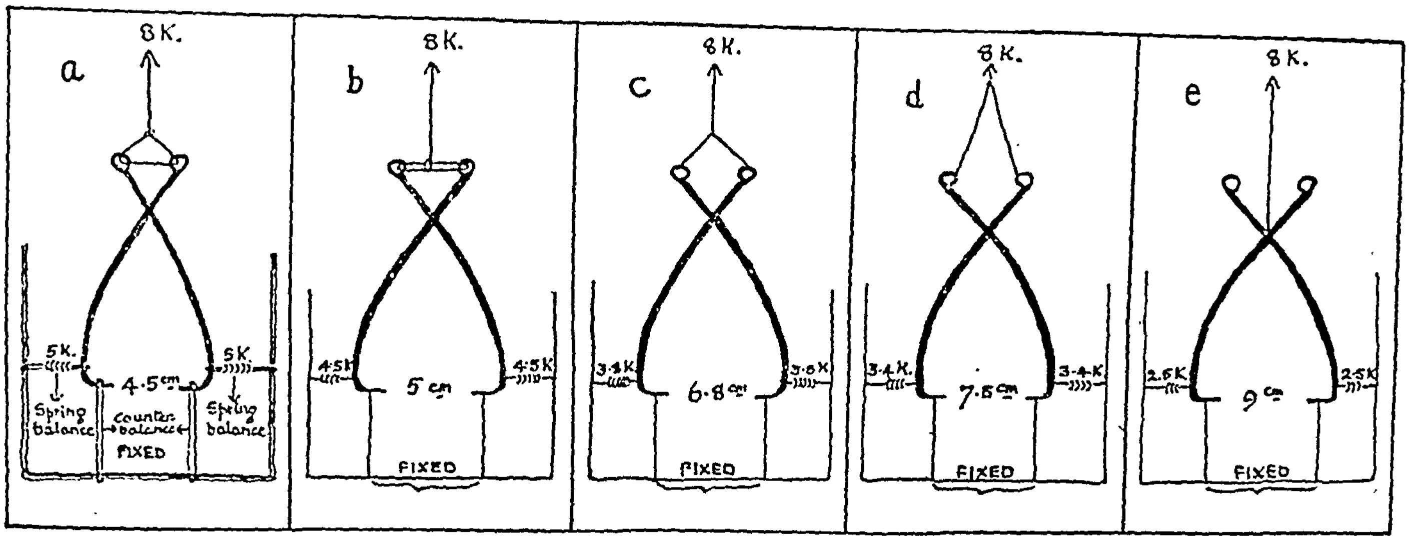

Fig. 3.—Changes in grip pressure due to various arrangements of cords at the handle ends.

JOGGLING

To my mind the most important factor causing penetration is joggling. By this is meant the constant vibration which must be transmitted over the pulleys from the weights and which is instigated by the body tone and movement to and fro. Gross movement is not referred to but a constant, fine, vibratory joggle; and its action is comparable to that of a convict trying to bore a hole through a brick wall with a nail. If he simply presses the nail against a brick, little or no result will follow; but if he joggles the nail or twirls it, he soon penetrates the brick. In the bones no rarefication occurs about a sterile screw or nail driven in and stationary; but if there is movement against it, it rarefies a space about itself. One finds that 90 per cent. of the calipers that cause discomfort have eroded a space about their points; and thinking back from this, it follows that joggling is at the root of the evil, generally combined with some other error. The caliper that does not erode or slip causes no discomfort and feels like an integral part of the man who wears it. If weight and pulley extension can be made to produce 1 cm. of lengthening (over the normal leg) inside of a week, and then a tie-on fixed extension is substituted, with the ring of Thomas slung so that it hangs an inch above the mattress, the calipers are comfortable always.

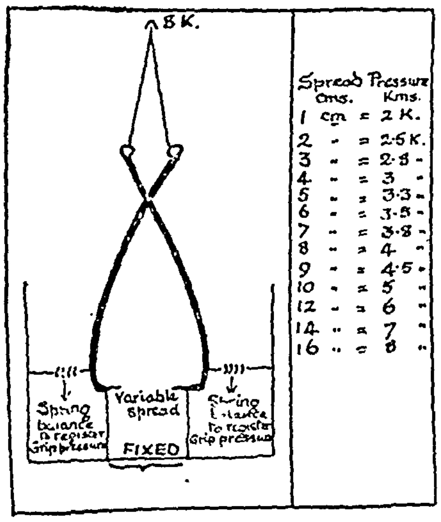

Fig. 4.—Variation in grip pressure with different spreads of the points.

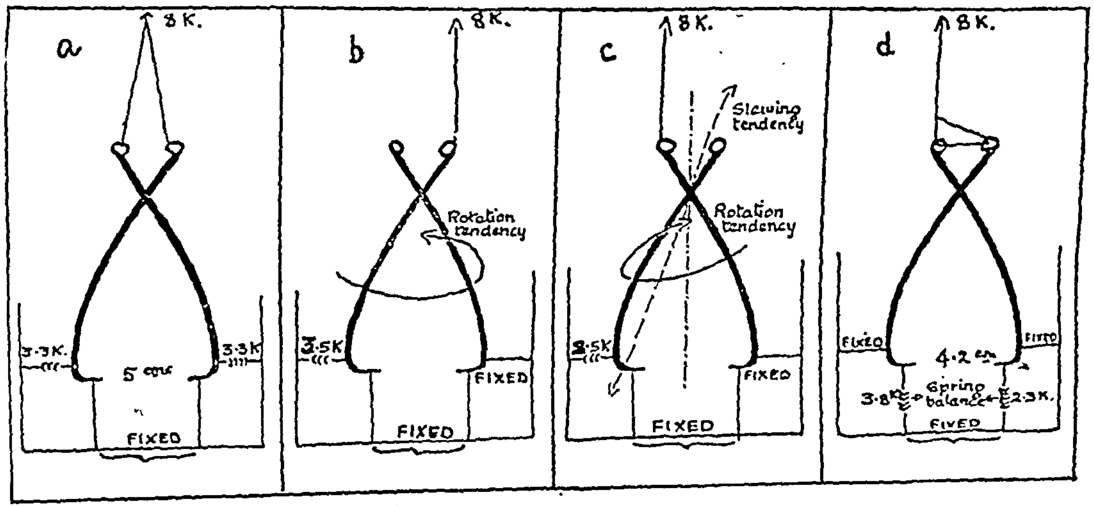

Fig. 5.—Influence of an eccentric pull on grip pressure and also the rotation and sluing tendency produced by an eccentric pull.

One should remember, as Sir Robert Jones has pointed out, that as long as the muscles must be on guard against movement in the fracture, they will not relax. This applies to all weight and pulley extension since there is a constant possibility of sudden jars with each bodily movement. When the patient is put on fixed extension, this possibility is removed and the muscles relax and one can see them do so. This being the case, the pull on the caliper points becomes negligible, and thus a factor in favor of penetration is removed. I do not advocate a tie-on extension until the limb is overlength which, with calipers in an early case, should not be more than a week and may be facilitated by the simple means of a ratchet on the weight and pulley made by having a knot in the cord about 6 inches proximal to the end of the Thomas splint. From this knot a cord is carried over the end of the splint and back to the knot twice, where it is tied (Fig. 7). Each day, as the weight and pulley gain a little length at the fracture, this ratchet cord is retied, thus holding by fixed extension any gain that may have been obtained by weight and pulley (Fig. 7). It detracts nothing from the efficiency of the weight and pulley, and it is very valuable in practice.

In order further to reduce the possibility of joggling, it is advisable at the time of application to tie the handle ends of the caliper together with a cord which passes through each eyelet twice, since it can then be drawn tighter. This then prevents any outward movement of the gripping points, so that they cannot loosen their grip if the weights are bumped against, lifted or jolted, either grossly or minutely. The grip of a caliper depends for its evenness and efficiency on a perfectly steady pull. Any variation of the pull, no matter how slight, means a variation of the grip pressure, and this is joggling and means erosion and pain, or penetration, or both.

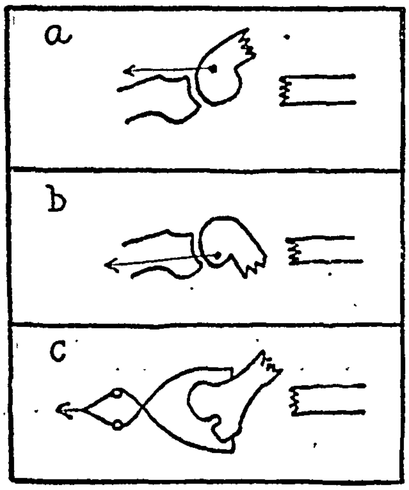

Fig. 6.—Results of applying calipers at different points; *a*, overelevation of lower fragment; *b*, depression of lower fragment; *c*, adduction of lower fragment.

CHECK APPLIANCES

To my mind the important points to be borne in mind in the prevention of penetration are: (1) a short, broad, tapering point; (2) the prevention of minute joggling; (3) application to the hard part of the bone; (4) low leverage (short handle ends not diverging too much), and (5) check appliances. There are several appliances in use at present to check penetration by putting a stop between the handle ends of the calipers. The theory is, that if a block is put there, the gripping points are prevented from coming closer to each other. This is true; but this in itself does not prevent one point from penetrating while the opposite point is pushed away from the bone and thus slips. I have seen this happen frequently when long, sharp, tapering points were used (Fig. 8).

The check caliper as designed by Major Pearson is an improvement on the old method of putting a block of wood between the handle ends. He employs a screw which can be set only to check approximation of the points at any width. I find that a screw locking both approximation and spreading is more satisfactory (Fig. 10.) The points which tend least to penetrate and yet always grip firmly are such that they present progressively a blunter end the nearer together they come (Fig. 1 *d*). The point tapers quickly from the full diameter of the gripping arm to a sharp point. The entire taper is on the side away from the direction of the pull. This leaves a broad surface to present to the bone and permits only of a tiny grip, but one which will not slip and which, owing to its breadth, resists dragging.

The question of the corroding of points and consequent slipping does not apply to short, heavy points, for it will take months for a heavy point to corrode off, since it must be a peripheral corroding equal all around. The narrow, long point corrodes at a place about one-sixteenth inch from the actual point, which then suddenly breaks off and the caliper slips. This objection can be met by making the points of rustless steel, which, however, does not prevent a long, sharp point from penetrating. The ordinary Besley caliper with points corrected by filing and with the handle ends tied together with cord (the pull being taken from a separate cord and not from the cross cord) will perform its function quite satisfactorily. There is, however, the objection to them all that the knee cannot be fully extended without the caliper arch impinging on the tibial crest, which then becomes a fulcrum, levering the caliper points upward and thus causing dragging on soft parts and periosteum (Fig. 9 *a*).

Thus, when the splint is removed and union is firm, the knee cannot be fully extended, and often for a long time after the patient walks, he must take the weight in the slightly flexed position, which means a weak leg and a limp. It also delays the use of an ambulatory while the knee is being straightened. Further, all the time the patient has been lying in bed, his quadriceps has been on the stretch disproportionately to the rest of his muscles, and a certain amount of tone is thereby lost which sometimes is never regained. Then, too, the pad of fat beneath the ligamentum patellae and the deposit of fat in the ligamentum mucosum increase in size markedly toward the end of convalescence and, since the knee has been in the flexed position, offer resistance to straightening.

I do not think that these things outweigh the tremendous advantages which the caliper gives us in length, position, early union, early clearing up of sepsis, decreased number of cases of acute medullary osteomyelitis, stiffness and stiff ankles, and pressure paralyses of the external popliteal nerve. Nevertheless, this is a disadvantage. This drawback has been met by designing a caliper which permits the pull to be taken from the sides so that the caliper can be in an upright position, and from buttons on the side cords lead along the leg to the distal end of the splint. Thus the caliper arch will never impinge on the tibial crest, and the knee can be fully extended (Fig. 9 *b*).

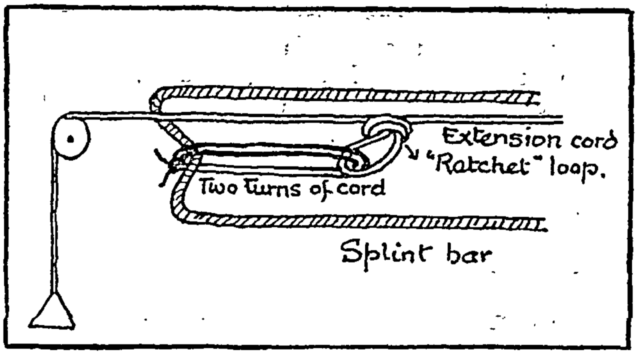

Fig. 7.—Ratchet arrangement.

This caliper has many advantages over the old Besley model, but has the objection of expense. The distance between the points is controlled in both directions by a screw which passes through the body of the caliper and locks it (Fig. 10). It is fixed rigidly to the bone so that no joggling can occur, there is no tendency to progressive penetration, and its points are broad and short. I find it perfectly comfortable and efficient, permitting full motion in the knee. It can be applied to the tuberosities of the condyles, since it will not penetrate even this thin cortex, and thus has the advantage of being subcutaneous and more safely applied.

By safely I mean that the synovial landmarks are more definite, while with the higher application, the subcrural pouch, especially on the external side, stands in danger of being penetrated. For special supracondylar fractures the same caliper equipped with double points, such as I have used since March, 1918, and a side arm as suggested by Captain Kilner, for controlling elevation or depression, can be used with advantage.

The causes of pain in caliper points in my experience are: (1) motion of the calipers in relation to the bone, and (2) edema and consequent pressure surrounding the points, being either periosteal or subcutaneous. The first occasions 90 per cent. of the discomfort I have seen. The second, which may depend on the first, being due to the presence of an irritating, joggling foreign body, calling out a leukocytosis which is sterile, occasions the most severe pain and is the cause of most of the caliper failures. I have never seen pain after the first forty-eight hours from a caliper which could not move or joggle in relation to the bone. One often finds penetration of the cortex associated with pain, both probably attributable to motion.

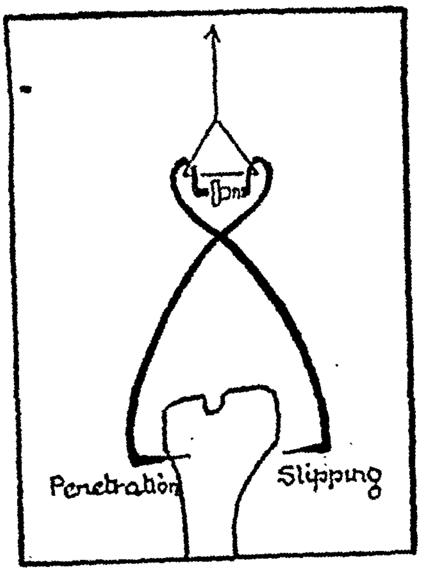

Fig. 8.—Check appliance between handles that does not prevent penetration and slipping.

A SATISFACTORY METHOD OF APPLYING CALIPERS

According to a method of applying calipers that I have found very satisfactory, the skin is cleaned for twenty-four hours beforehand with alcohol. It is unnecessary to move the patient from his bed. I prefer chloroform or ether anesthesia, although nitrous oxid and oxygen can be used satisfactorily. The patient is always given ¼ grain of morphin and 1/100 grain of atropin beforehand. While the patient is being anesthetized, the pulleys, cord, weights and knee flexion piece are made ready by an assistant. It is desirable to have the condyles well above the level of the splint bars rather than sagging down in the slings, as then they are more accessible.

When the patient is anesthetized, the skin over the condyles is painted with iodin. Sterile towels are placed about the knee. An incision 1 inch long is made longitudinally just proximal to the adductor tubercle and carried only down to, and not through, the deep fascia. This is packed with gauze to control all oozing, and then directly at right angles to the line of the tibia the opposite incision is made in the same way, on the outer side of the knee. When perfectly dry, both incisions are rubbed thoroughly with bismuth iodoform petrolatum paste and the caliper points pushed through the fascia and deep tissue to the bone. It is wise to scratch the periosteum from a small area with each point before making them firm. This does away with all pressure on the periosteum, which is very sensitive, and prevents the collection of serum beneath it, thus obviating the most usual cause of aching at the caliper points. To make the caliper firm I press hard with the heel of each hand against the gripping arms until I feel them bite into the cortex. An assistant then passes a cord through the eyelets twice and ties very tightly so that the caliper is prevented from releasing its grip. A dry gauze dressing is then applied; being carefully packed into the incisions so that no serum shall remain to become a source of leukocytosis. The points should be inserted through the most proximal ends of both incisions, so that when the pull is put on they will not touch the skin edge, which is sensitive.

The skin incision is made larger than is necessary to admit the points so that if any serum accumulates later or if the tissue becomes edematous, no pressure can develop, and therefore no pain results. The incision is not carried beyond the deep fascia because then no other instrument, save the actual calipers, can carry slight infection to the depths of the wound. Further, there being no necessity to bore into the bone, no avoidable damage is done. Certainly, the fewer instruments used, the less risk is run, and since the calipers themselves suffice, I see no reason for complicating the operation.

The bismuth iodoform petrolatum paste is merely a fetish and gives one the feeling that no infection can pass through its antiseptic barrier. It seems to leave the points of application drier and less edematous than other antiseptics seem to do.

The screw-locking caliper described above is applied in the same way except that it is screwed home instead of being pushed, and is applied to the flat surfaces of the condyles, not proximally to them.

As regards the point of application of calipers, the fracture itself is an important factor in deciding the exact point of application. For instance, in supracondylar fractures, the point of application is of the utmost importance. If one applies calipers in a position relatively anterior on the tuberosities of the condyles, the application of force in a direction parallel to the femur tends to overelevate the lower fragment (Fig. 6 *a*). If one applies them in a posterior position, the reverse is the case and they tend farther to depress the lower fragment (Fig. 6 *b*). If one applies the inner

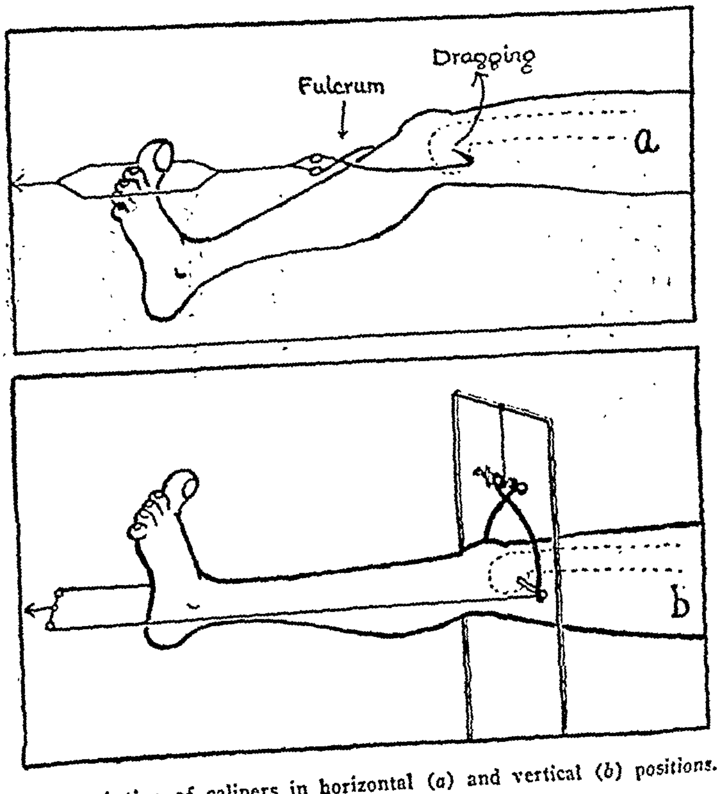

Fig. 9.—Action of calipers in horizontal (*a*) and vertical (*b*) positions.

point more proximally than the outer point, the lower fragment will be adducted and the calpiers will pull mostly on the more proximal point, which will then tend to penetrate and slip (Fig. 6 *c*). If one applies the outer point more proximally, the reverse is the case. Both points, when one desires a straight pull, must be applied on either end of a line drawn at right angles to the line of the tibia. This line represents the axis of the femur, although its shaft inclines from this line. This inclination is compensated for by the offset head. If the inner point is applied in an anterior position and the outer in a posterior position, there seems to be only a slight tendency to produce rotation inward. This screw-power for rotation can be increased by using a double cord instead of the single one. letting each cord wrap around the splint bars.

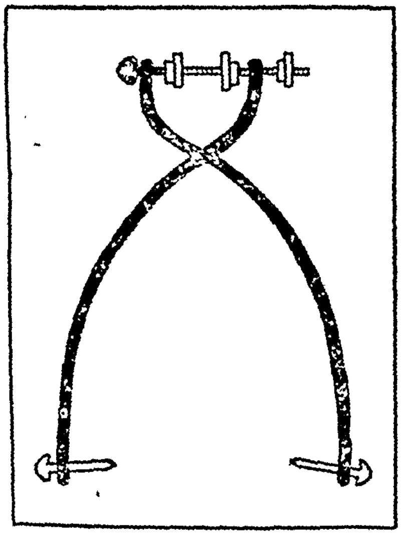
Fig. 10.—A screw that locks the caliper.

Any of these facts may be turned to advantage in correcting malalinement, or may be abused in ignorance. Figure 11 shows the available surface for caliper application. It is always safe to apply the points on the most prominent points of the condyles. These are never covered by synovia. However, before attempting to apply calipers to any other spots, one should study the synovia, the course of the anastomotica magna artery, the external popliteal nerve, and the functions of the various ligaments around the part, as well as the cortex of the bone.

The direction of the pull is important, and much may depend on it. The rule is to pull in the long axis of the bone. Departure from the rule may be advisable only in exceptional cases and after due consideration. If one has properly applied calipers the rule need never be departed from.

The amount of pull will vary according to the shortening to be overcome, the strength of the musculature, the age and site of the fracture, the amount of swelling, the tenseness of the deep fascia, and the degree of infection. It is my custom to apply 15 pounds directly.

If this promises, after twenty-four hours, to stretch the fractures sufficiently, it is enough. If it seems not to perform its function, which can be from ¼ to 2 inches per day, it is increased to 20 pounds, which is sufficient to stretch almost any fracture full length, provided the apparatus is correct. One need not hesitate to use 25 pounds, or even 30 pounds for a few days, and often forcible reduction under an anesthetic may be resorted to. If the extra weight causes periosteal pain, it can be reduced. One finds that 10 pounds is the least that avails fully, although others can get results with only 5 pounds, I am told. However, one aims to get a little overlength inside a week and thereafter to hold this gain by tie-on fixed extension, which in reality takes very little pull once overlength is accomplished.

The calipers will probably cause discomfort and even pain for the first forty-eight hours. During this time morphin should be given freely, since then the patient lies still and gives the points a chance to settle down. The weights, too, can do more efficient work. If morphin is withheld during this early stage, the patient is restless, and every movement only further irritates his fresh wound. Later on, after three or four weeks, one may find the points again causing pain. This will usually be a throbbing and is due to a sterile leukocytosis and edema about the points. A course of fomentation over the whole front of the knee region, especially applied at night, will soon ease this and dispel the edema. This pain is usually due to some slight erosion and should not occur with well applied and correct calipers. However, one's early cases will show these things, and occasionally a patient whose calipers are perfectly applied will complain. Relief can be given sometimes by running the needle of a hypodermic syringe along the caliper point and squirting a small amount of 2 per cent. cocain around the point. A tiny pinch of powdered procain applied as a dressing to the caliper points is often very efficient. Whenever any serum appears about the points, they should be washed and dressed with eusol or some mild lotion. Sometimes temporary reduction of the weight may give permanent relief, so that it may be all reappled comfortably. Under no circumstances should all the weight be removed or lifted, as then the caliper grip lets go and the caliper will surely slip. This applies only to the old nonlocking model. Sometimes the weight can be divided, and part applied through an adhesive extension to the leg, while the caliper pull is reduced. If all attempts to relieve pain fail, the calipers may be reapplied through fresh incisions at a little distance from the old ones and preferably above them. No case of sepsis has been seen in more than 300 cases which amounted to more than slight local inflammation. The knee joint has not been involved. Twice the anastomotica magna artery has been ruptured with the development of small aneurysms necessitating ligation of that artery.

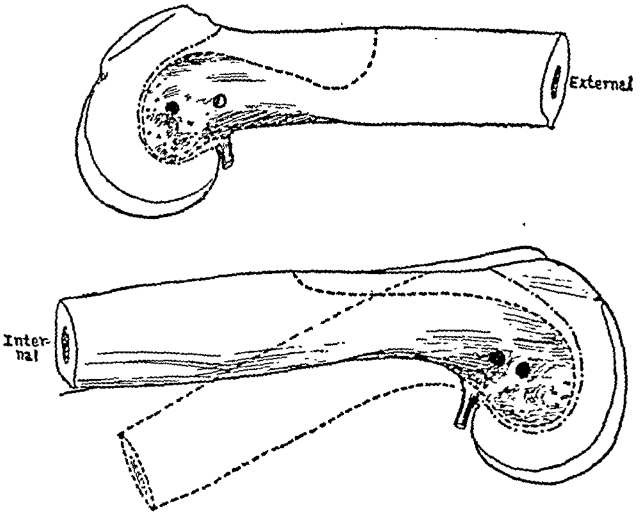

Fig. 11.—Available surface for application of calipers.

The caliper is, of course, applicable to other bones than the femur. My experience is largely confined to its use on the femur alone, although on several occasions, in the treatment of fractures of the femur, I have used it on the lower ends of the tibia and fibula, the tibial tubercle and os calcis with good result.

As regards sinuses resulting from the use of calipers, it seems that they occur only when the medulla has been penetrated; and when calipers of proper construction and intelligent application have been used, the tiny incision seals in a few hours after the calipers have been removed, and in a week it is healed and stays healed. The scar is not painful and does not interfere with motion of the ligaments about the knee joint. However, I do not advocate the use of calipers by men who have not studied the principles underlying their action.

Captain Preston, working at Taplow Military Hospital, has had splendid success in the treatment of fractured tibiae and fibulae, and Capt. W. Grant Waugh has used the caliper with success on the humerus.

Special Military Surgical Hospital.

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF RETROGRADE URETERAL CALCULUS

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Roentgenologist, Truesdale Hospital and Clinic

In January, 1918, a patient in whom there was a retrograde movement of a ureteral calculus was referred to me. Though Kretschmer[1] has since reported two cases of the sort, I was unable at that time to find a report of a similar case.

REPORT OF CASE

History.—A man, aged 29, first appealed for medical advice in March, 1917, when he had his first attack of pain in the right back radiating into the abdomen, right thigh and penis. This was associated with vomiting, voiding of bloody urine and frequent desire to void. The attack required a number of hypodermic injections of morphin for relief. Three months later he had four similar attacks within ten days. He had always been delicate as a child, and had all the diseases of childhood. The father and mother were living and well. There was no tuberculosis or cancer in the family. The patient's habits were good.

Physical Examination.—He was a small, poorly developed man. His color was good. The skin was active. The pulses were normal. The pupils were equal and reacted to light and accommodation. The external ocular movements were normal. The tongue, teeth and throat were normal. The heart was of normal size and of good muscle tone; there were no murmurs. The lungs were clear, front and back. The abdomen was negative, but during an attack there was marked rigidity of the abdominal wall. The extremities were normal.

Urinalysis, after attacks, had always shown the presence of red blood corpuscles.

Roentgenoscopy, June 18, 1917, by Dr. John H. Lindsey, gave no evidence of stones in either kidney. There was a calculus at the lower end of the ureter below the brim of the pelvis on the right side.

Roentgenoscopy, Jan. 18, 1918, gave no evidence of stones in either kidney. There was a calculus at the lower end of the ureter below the brim of the pelvis on the right side.

Operation, Jan. 19, 1918.

Cystoscopy revealed the left ureter and the bladder normal. The catheter could not enter the right ureter.

Operation.—January 19, by a suprapubic incision, the peritoneum was opened, but no stone was found at the site indicated by roentgen ray. The ureter was dilated to the size of a man's thumb, and 3 inches from the bladder wall there was a moderate constriction. A probe was passed into the bladder without meeting any obstruction, and no grating feeling was detected. Exploration of the upper part of the bladder was negative. The ureter was tied off near the bladder, and the wound closed and drained with one rubber dam through a stab wound. As it was felt that this procedure had not benefited the patient, and since the right kidney felt hydronephrotic, a right nephrectomy was done. The stone was found in the removed kidney. The patient died two hours later of surgical shock.

Postmortem Examination.—The stone had evidently rested on a stricture of the ureter, and when the patient was tipped into a slight Trendelenburg position to free the pelvis of intestine, the stone had fallen back into the kidney and dropped into the lower calix, where it was out of reach of the probe.

SUMMARY

A patient gave typical symptoms and signs of a stone in the ureter. Two roentgen examinations, seven months apart, showed the location of the stone in the ureter in exactly the same position below the brim of the pelvis. There were no stones in the kidneys. Subsequent operation failed to reveal the stone on the position designated by roentgen ray. The right kidney was removed because it was hydronephrotic, and the stone was found in the kidney that had been removed.

At the time I was asked why I had not stated in my roentgenographic report that the stone was or might be movable; but I had never heard of a similar case, and could find no reports of similar cases in the literature available. I am offering this report to add to the few cases that Dr. Kretschmer and others have already sent in.

151 Rock Street.

Special Article

EPIDEMIC OR LETHARGIC ENCEPHALITIS (NONA)

The name "encephalitis lethargica" was coined by Economo,[1] who described a group of cases of this disease occurring in epidemic form in Vienna in 1917. It describes a condition primarily characterized clinically by lethargy and pathologically by polioencephalitis. This term has been cricitized by English observers since it applies a clinical adjective to a pathologic substantive; the term "epidemic encephalitis" has seemed to some English authorities preferable. In this connection, Economo referred to a mysterious condition called "nona" which occurred in Italy and Hungary in the spring of 1890. Netter[2] has pointed out that, although this disease is new to present observers, on two occasions previously it has manifested itself in epidemic form, following the influenza epiedmic of 1890 in northern Italy and in Hungary, and appearing in the United States and practically all of Europe in 1895.

The first cases noted in England occurred in February, 1918, and the British journals during the first half of the year contained numerous suggestive case reports. A report recently issued by the Local Government Board of Great Britain with the assistance of the Medical Research Committee[3] recognizes the disease as an infection due to a specific virus.

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[1] Kretschmer, H. L.: The Retrograde Movement of Ureteral Calculi, J. A. M. A. **71**: 1355 (Oct. 26) 1918.

[1] Economo: Verein f. Psych. u. Neur. in Wien, April 17, 1917; Wien. klin. Wchnschr., May 10, 1917; Neurol. Centralbl., Nov. 1, 1917.

[2] Netter: Lethargic Encephalitis, Paris méd. **8**: 81 (Aug. 3) 1918; abstr. J. A. M. A. **7**: 1520 (Nov. 2) 1918; Bull. acad. de méd. **79**: 337 (May 7) 1918; abstr. J. A. M. A. **71**: 73 (July 6) 1918.

[3] Report on an Inquiry into an Obscure Disease, Encephalitis Lethargica, Local Government Board Reports on Public Health and Medical Subjects, N. S. 121, London, H. M. Stationery Office. 2 s. 6 d., net.

PATHOLOGY

Professor Marinesco of Bucharest has said that the changes in the brain belong histologically to the class of polienccphalitic diseases which are inflammatory in nature. Clinically the available evidence, according to Wilson,[4] points clearly in the direction of an encephalitis amounting usually to an encephalitis of toxi-infective origin. The brains examined showed little macroscopically on the cranial surfaces beyond meningeal congestion, and, perhaps, a quite minor amount of patchy localized meningitis. On section, both gray and white matter were found to be the site of minute hemorrhagic areas scattered irregularly ("piqueté hémorragique" in Netter's phrase). Numerous necropsy reports failed to reveal any specific region of the brain as invariably affected, although there is no doubt that the regio subthalamica and the mesencephalon generally are as often affected as any other part. Motor cranial nerve nuclei are involved, while sensory nuclei escape. Microscopically, there is thickening of the leptomeninges with exudation or vascular congestion, and the gray matter is the site of perivascular cellular infiltration. In addition to these interstitial changes there are parenchymatous alterations in the shape of nerve cell degeneration and actual neuronophagia, as in poliomyelitis. Economo found evidence of regenerative processes in some of his cases.

BACTERIOLOGY

No recognizable organism has been detected in the tissues on microscopic examination. In a single one of Economo's cases an emulsion of the brain and cord was injected subdurally into a monkey by von Wiessner. The animal died in forty-six hours with symptoms of stupor for twenty-four hours previously. The brain was typical of hemorrhagic encephalitis, and von Wiessner recovered a gram-positive diplostreptococcus which he cultivated and which on injection into other apes produced somnolence and mental weakness. Von Wiessner states that a similar organism was found in all the human cases that he studied, but other observers do not mention such a finding.

CEREBROSPINAL FLUID

In all the reported cases the cerebrospinal fluid has been bacteriologically negative; the cell count has been increased in some cases.

CLINICAL SYMPTOMS

The most frequent characteristics are lethargy or stupor and symptoms indicating lesions in or about the nuclei of the third pair of cranial nerves. Usually there is fever in the early stages, the common range being between 101 and 102; but high temperatures have been reached in other cases. The pyrexia usually lasts from two to five days, but may continue longer. A period of subnormal temperature not infrequently follows. In the majority of cases a prodromal period may be recognized, but is not well defined. Usually the first symptom is simple catarrhal conjunctivitis, and in a smaller number of cases, tonsillitis, simple sore throat and bronchial catarrh; but the salient symptom observed in 80 per cent. of the cases was progressive lethargy. The onset is usually gradual, although in some cases the disease has been ushered in by a fainting attack. The patient becomes dazed or stupid, sleeps a great deal, and is drowsy by day. In marked cases, this lethargy is accompanied by heaviness of the eyelids, pain in the eyes, blurred vision, photophobia, headache, dizziness, and in some cases, diplopia and gradual passing into stupor. In some instances mental hebetude is associated with a highly emotional state, but in others the mental depression is so great that melancholia may be suspected. To summarize: The most frequent and characteristic signs in the prodromal period are lethargy, asthenia, vertigo, headache, diplopia and some alteration in the mental state.

After the prodromal period the symptoms of infection become manifest with febrile reaction, the patient lying in bed, often unable to make any voluntary muscular movement, the face expressionless and mask-like, and there may be double facial paralysis. Nocturnal delirium is not uncommon, and there may be rigidity. In a considerable portion of cases the voice becomes nasal and monotonous; sentences are uttered slowly, the words slurred into one another. But in some cases, once started, the patient chatters sentences with so great a rapidity as to be unintelligible. The commonest sign is ophthalmoplegia, which was recognized in 75 per cent. of the cases examined.

Dr. A. S. MacNalty, who contributes to the British report, recognizes seven types of cases: (*a*) clinical affection of the third pair of nerves; (*b*) affections of the brain stem and bulb; (*c*) affections of the long tracts; (*d*) the ataxic type; (*e*) affections of the cerebral cortex; (*f*) cases with evidences of spinal cord involvement, and (*g*) the polyneuritic type in which affection of the peripheral nerves is suspected.

PROGNOSIS

The prognosis is usually better than is suggested by the alarming state of the patient. In the British report it is stated that of 168 cases, thirty-seven deaths were recorded. Economo reports six fatal cases out of eleven; Netter, seven of fifteen; von Wiessner, two of thirteen, and Findlay,[5] one of three. The duration of the stupor is variable, lasting from two to three days, and more often from two to five weeks, and in one case in which the patient eventually recovered, for eight weeks. Certain manifestations have persisted in some instances after the expiration of three months from the day of onset. These were an alteration in the mental condition, persistent cranial nerve palsy, the appearance of paralysis—apparently of spinal cord origin—and athetosis. In one of Findlay's patients, after five months, there remained a right sided facial paralysis, ptosis of the right upper eyelid, left external squint, and a general mental apathy.

TREATMENT

No specific method seems to be available, most authorities agreeing that the best that can be done is to put the patient to bed, providing him with good nursing, and perhaps with transient relief through withdrawal of cerebrospinal fluid. Warmth applied to the limbs is a remedy for pain, numbness and tingling. It is recommended that no opiates be given.

NOTIFICATION

This condition has been made notifiable in England. Since it is not clear to what extent the condition is a specific infection, it would appear to be desirable that the disease be made notifiable in general so that epidemiologic studies may be made in addition to bacteriologic studies on the etiology of the disease.

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[4] Wilson, S. A. K.: Lethargic Encephalitis, Lancet, **2**: 7 (July 6) 1918.

[5] Findlay, L.: Lethargic Encephalitis, Glasgow M. J. **90**: 193 (Oct.) 1918.

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SATURDAY, MARCH 15, 1919

EPIDEMIC OR LETHARGIC ENCEPHALITIS

Acute Infectious Ophthalmoplegia, Acute Encephalitis, Nona?

This unfamiliar disease, many cases of which were observed in England and France early in 1918 and in Vienna in the winter of 1916-1917, when von Economo suggested the name "encephalitis lethargica," now seems to be making its appearance in various parts of this country. In the recent discussion on influenza before the Institute of Medicine of Chicago, Bassoe[1] stated that during the last few weeks he had seen several cases which were characterized by marked drowsiness and paralysis of cranial nerves, especially the ocular, and which otherwise corresponded to the clinical picture of lethargic encephalitis, and that he knew of similar observations by other physicians. Last week Pothier[2] reported the clinical details of eight cases from Camp Lee, Va., and Neal[3] mentions the occurrence of cases in New York.

In previous editorial discussions[4] of the European, especially the English, reports on lethargic encephalitis, special emphasis was placed on its similarity to the cerebral and bulbar forms of epidemic poliomyelitis, and it was suggested that further investigations might show "the new disease" to be true epidemic poliomyelitis. In the meantime, the report[5] of an extensive collective investigation of lethargic encephalitis (168 cases) has appeared from which we learn that, while nothing by way of a causal agent has been demonstrated, intracerebral inoculations of monkeys with emulsions of diseased nervous tissue failed completely to produce any results. As the monkey is readily susceptible to such treatment with similar material from cases of epidemic poliomyelitis, the present indications are that the two diseases are separate and distinct, and this conclusion is borne out also by certain clinical and epidemiologic differences to which attention has been called, by Netter in Paris, especially. It is noteworthy, however, that the anatomic changes in the two diseases are of the same general nature, and MacNalty[6] ventures the suggestion that the relation between epidemic poliomyelitis and lethargic encephalitis may be comparable to that between typhoid and paratyphoid fevers. The English investigators consequently regard lethargic encephalitis as due to an as yet unknown virus which causes inflammatory changes, especially perivascular infiltrations, in the basal ganglions, the upper part of the pons, especially in the gray matter of the floor of the fourth ventricle, and in less degree elsewhere in the medulla. It is distinctly a polienceplialitic disease: the outstanding clinical features are a more or less pronounced lethargy, often progressive, and paralysis of the third and less often other cranial nerves.[6] Ophthalmoplegia was observed in about 75 per cent. of the English cases.

It is noteworthy that cases appear to occur with the general symptoms of fever, lethargy and weakness, but without paralysis, and hence are easily mistaken for more common infections, though perhaps of the greatest importance in the spread of the disease, which now is notifiable in England and Wales. At present, however, no new cases seem to be occurring in these countries. The results of further and more complete observations of lethargic encephalitis as it occurs in this country will be awaited with special interest.

It is quite remarkable that while English and other European observers do not seem to place any special stress on the relation of the newly recognized disease to influenza, the American cases so far reported are associated by the observers, particularly Bassoe[1] and Neal,[3] more or less directly with influenza. Four of Pothier's[2] eight patients are said to have had influenza a few weeks before they came down with lethargic encephalitis. While the question thus raised cannot be answered at this time, the information we now have indicates that it is only in connection with epidemics of influenza that anything definitely resembling lethargic encephalitis is described in the older literature.

It is said that profound and prolonged sleep has been observed in connection with many epidemics of influenza since early times. Zuelzer[7] mentions that in the epidemic of 1712, somnolent conditions were so frequent and so marked that in Tübingen, for instance, the disease was known as sleeping sickness, and Longuet[8] gives a quotation from Camerarius which appears actually to describe ophthalmoplegia. Coming down to more recent times, we find that in the early nineties of the last century, at the time of the influenza outbreak of 1889-1891, quite a little was written about a since forgotten disease called "nona" (also "la nonna"), which is said to have occurred especially in northern Italy and Hungary, but also elsewhere, and of which lethargy and weakness were pronounced manifestations.[9] At about the same time cases of ophthalmoplegia with stupor and somnolence were described by Blanc, Mauthner and others,[10] and the question was raised then whether "nona" was not a kind of ophthalmoplegia. "Nona," however, failed to establish itself as a definite disease, and was soon forgotten completely.[11]

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[1] Bassoe, Peter: J. A. M. A. **72**: 677 (March 1) 1919.

[2] Pothier, O. L.: Lethargic Encephalitis, J. A. M. A. **72**: 715 (March 8) 1919.

[3] Neal, Josephine B.: Meningeal Conditions Noted During the Epidemic of Influenza, J. A. M. A. **72**: 714 (March 8) 1919.

[4] Is Epidemic Poliomyelitis Prevalent in England and France? editorial, J. A. M. A. **71**: 1221 (Oct. 12) 1918; Encephalitis Lethargica: A New Disease? ibid. **72**: 414 (Feb. 8) 1919.

[5] Report on an Inquiry into an Obscure Disease, Encephalitis Lethargica, L. G. B. Rep. N. S. 121; reviewed in Brit. M. J. **1**: 45 (Jan. 11) 1918.

[6] For more complete description of symptoms see p. 794, this issue.

[7] Zuelzer: Influenza, Ziemssen's Handbuch der speziellen Pathologie und Therapie **2**: 506, Part 2, 1874.

[8] Longuet, P.: La nona Semaine méd. **12**: 275, 1892.

TAKING CHANCES IN BLOOD TRANSFUSION

Transfusion of blood or blood constituents has become a necessity in modern clinical practice. Its general utility is unfortunately still limited by a number of difficulties of technic and incompatibilities of blood that have not been satisfactorily mastered. None of our present methods—the syringe cannula, the paraffined tube and the citrated blood procedures—are absolutely free from all objectionable features, among which unanticipated hemolysis, agglutination of the corpuscles, and febrile reactions are included. Of the dangers due to incompatibility we shall consider particularly those due to agglutination rather than those due to lysis.

In 1900, Landsteiner first suggested that human beings might be divided into definite groups according to whether or not the corpuscles of one were agglutinated by the serum of the other, or vice versa. His preliminary grouping into three classes was subsequently shown to be somewhat inaccurate, and numerous examinations made since that time have definitely shown that there are four groups. As long ago as 1907, Hektoen[12] said: "From the practical point of view, isoagglutination of human corpuscles is of immediate interest in connection with the determination of the opsonic index and with transfusion of blood." It will be remembered that in 1906 Crile had successfully transfused blood from normal to diseased human beings. Hektoen also said, in commenting on this achievement: "The occurrence of isoagglutinins in human blood suggests that under special conditions homologous transfusion might prove dangerous by leading to erythrocytic agglutination within the vessels of the subject transfused." Since 1906, transfusion has been performed on such a multitude of persons in such a great variety of disease conditions that there is good evidence to show the necessity for again repeating the warning of Hektoen to the effect that the presence of these isoagglutinins in human blood may be a danger during transfusion. Cases of transfusion in human beings with seemingly unfavorable results due to cross-agglutination were reported by Schultz (1910), Hopkins (1910) and Ottenberg (1911).

The subject has been somewhat complicated by the introduction of the citrate method of transfusion, whereby the agglutination of the blood during transfusion is prevented by the addition of a small quantity of sodium citrate. This method of transfusion, being relatively easy, has become quite a vogue, and has led many observers to believe that preliminary tests of the compatibility of donors' and recipients' blood are unnecessary. This appears to have been the case especially with some of those who utilized the transfusion of convalescents' blood as a means of treatment during the recent epidemic of respiratory diseases. Recently Pemberton has reported on 1,036 blood transfusions, and he further emphasizes the need of preliminary tests.[13] This large series of transfusions was made in the Mayo Clinic between 1915 and 1918, thirty-five of them by direct methods and 1,001 by the citrate method. Pemberton is convinced of the importance of preliminary tests before transfusion. He points out that Bernheim in 1915 collected data of 800 transfusions by twelve different operators, and reported hemolysis in fifteen cases with four deaths. In twelve cases in the series of transfusions in the Mayo Clinic there were group reactions. In every case in which the blood had been grouped by the microscopic test, the observers were able to locate later the error in the test, most of them due to clerical errors in recording the group of the donor or the recipient. He describes a typical reaction, such as occurs when transfusion is done between persons of incompatible groups:

> They occur early after the introduction of 50 or 100 c.c. of blood; the patient first complaining of tingling pains shooting over the body, a fulness in the head and an oppressive feeling about the precordium, and, later, an excruciating pain localized in the lumbar region. Slowly but perceptibly the face becomes suffused, a dark red to a cyanotic hue; respirations become somewhat labored, and the pulse rate, at first slow, sometimes suddenly drops as many as 20 to 30 beats a minute. The patient may lose consciousness for a few minutes. In one half of our cases an urticarial eruption, generalized over the body, or limited to the face, appeared along with these symptoms. Later the pulse may become very rapid and thready; the skin becomes cold and clammy, and the patient's condition is indeed grave. In from fifteen minutes to an hour, a chill occurs, followed by high fever, a temperature of 103 to 105 degrees, in which the patient may become delirious. Jaundice may appear later. The macroscopic appearance of hemoglobinuria is almost constant. In three such instances the symptoms were not recognized at the time of transfusion, and 500 c.c. of blood were injected. All the patients died,

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[9] For reference to the literature on nona, which is well abstracted by Longuet, see Index Catalogue, Library of Surgeon-General's Office, Series 2, **7**: 945, 1902 (Anomalous and Unusual Forms of Influenza).

[10] Cited by Longuet (Footnote 8).

[11] The derivation and meaning of the word "nona" are obscure. It may have been a corruption of coma. Nona means literally ninth hour, and there is no evident connection between this meaning and the disease in question. "La nonna," a name also given the disease sometimes, means grandmother literally, and here again the connection is not evident. Nona is defined as follows in Foster's Encyclopediac Medical Dictionary (1894): "An alleged new form of disease reported in 1890 from northern Italy, Bavaria and Russia. It appears, however, that there is no foundation for the supposition that there is any such new disease, and that the reports are founded on cases of comatose typhoid fever, somnolence following influenza, and smallpox of an irregular and severe development."

[12] Hektoen, Ludvig: Isoagglutination of Human Corpuscles, J. A. M. A. **48**: 1739 (May 25) 1907.

[13] Pemberton, J. de J.: Blood Transfusion, Surg., Gynec. & Obst. **28**: 262 (March) 1919.

> two in one and three hours, respectively, following the transfusion, and one became comatose shortly afterward and died thirty hours later. In the other nine instances the symptoms were early recognized and interpreted, and the transfusion was concluded after the injection of 50 to 100 c.c. of blood. Adrenalin [epinephrin] and atropin were administered with good effect. There was no mortality in this group.

He concludes that these cases "point out most strikingly the fact that the injection of incompatible blood, namely, in which the donor's cells are agglutinable by the serum of the patient, is attended by the development of symptoms of the gravest nature, and that if these are not early recognized and the transfusion concluded before the injection of a large quantity of blood, fatal results are to be expected."

In the case of citrate transfusions, certain special untoward factors concerned have been made the subject of study in man by Drinker and Brittingham[14] at the Harvard Medical School laboratories. They have failed to observe any constant relation between the method of citration or the purity of the citrate used and the number of reactions. The objectionable component resides in the cells of the blood; for citrated plasma, thoroughly freed from all formed elements by prolonged high speed centrifugalization or by porcelain filtration, is singularly nontoxic, contrasting markedly with serum in this regard. On the other hand, the washed whole cell content of blood is uniformly toxic, whether injected into the individual from which the cells have been removed (plasmapheresis) or into different individuals who have been tested and show no agglutination or hemolysis of red cells.

A further analysis of the location of the factors in the cells responsible for the difficulties indicates that reactions decrease as the platelets are removed from the transfusion mixture. The Harvard investigators report that salt solution, red cells, white cells in greatly reduced numbers, and absence of platelets make the most perfect blood for transfusion that they have observed. Apparently changes in the platelets as a part of the process of coagulation represent a transformation responsible for the appearance of toxicity. The leukocytes themselves seem to be devoid of incompatibilities. Finally, they seem to have shown that citration harms the red cells, thereby promoting the possibility of hemolysis in otherwise compatible bloods. They found 44 per cent. of reactions with citrated blood, as compared with 20 per cent. of reactions when uncitrated blood transfusions were performed. They state that 20 per cent. is a decidedly lower percentage of reactions than has been obtained with any other method.

Contrasted with their small series, however, is that of Pemberton, who found only 219, or 21 per cent., of reactions in the 1,036 cases which he analyzes. Lewisohn[15] has also recently reported 200 cases, and is convinced that the frequency of chills is about the same with the citrate as with other methods. He, too, found reactions in 20 per cent. of his cases.

Thus, one by one, the detrimental factors in transfusion are being recognized. The next steps consist in devising ways to avert or eliminate them and thereby make a frequently desirable performance more dependable and less threatening.

WAR CHEMISTRY AND MEDICINE

The signing of the armistice and the prospect of a long, if not permanent, peace have lifted the veil of secrecy that has long hidden many undertakings of great scientific interest in connection with the war: Only a few months ago every one was saving fruit kernels and nut shells at the behest of the American Red Cross. It was vaguely known that the materials were to be converted into charcoal, which was to be employed in the manufacture of gas masks. But why these particular products were selected, what became of them, and how they act were questions that belonged to the great mass of mysteries developed by the secrecy of war time.

Colonel Burrell,[16] chief of the research division of the chemical warfare service, has at length disclosed some of the "inside history" of his service. The absorbent value of charcoal of a suitable sort is extraordinary. During its preparation, a film of hydrocarbons is likely to remain adherent to the surface of the particles. To remove this is highly important, because it seriously diminishes the absorptive power. American initiative, guided by chemical science, found a way to overcome the difficulty. By oxidizing processes the charcoal was cleansed of its hydrocarbon film and rendered active.

The extraordinary and utterly unexpected diversity of gases and other noxious substances employed by our enemies in their warfare[17] early taxed the ingenuity of all the Allies to devise satisfactory respirators. At first an alkaline solution was sufficient to protect against inhalation of chlorin; but when phosgen, prussic acid, xylyl bromid, chlorpicrin, bromacetone, and a succession of other equally formidable products had to be taken into account, cheesecloth impregnated with alkali or even with sodium phenate and hexamethylenamin no longer saved the wearer of the mask from untoward effects. The soda-lime finally developed and used in masks contained lime, cement, infusorial earth, sodium hydroxid, sodium permanganate, and water. Each ingredient performed a definite function. The lime furnished the main part of the absorption for acid gases, which it neutralizes, generally with the formation of calcium chlorid. The cement is used to make the granules sufficiently hard and yet not decrease the porosity, which is fatal to good absorption. Several other binders give equally good hardness, but all destroy the porosity. The infusorial earth is used to increase the porosity of the granule and thus permit the gas to have access to the interior and utilize the full absorptive capacity of the granule. The sodium hydroxid activates the rate of absorption of most gases, and, in addition, makes the control of the drying process more simple and tends to maintain the proper water content in the finished granule. The sodium permanganate is used primarily to oxidize certain oxidizable gases, which are difficult to absorb in gas masks. The water is necessary in making up a satisfactory mixture, and, after drying, a fairly definite moisture content is needed to get the best results in the absorption of gases.

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[14] Drinker, C. K., and Brittingham, H. H.: The Cause of the Reactions Following Transfusion of Citrated Blood, Arch. Int. Med. **23**: 133 (Feb.) 1919.

[15] Lewisohn: Am. J. H. Sc. **157**: 253, 1919.

[16] Burrell, G. A.: The Research Division, Chemical Warfare Service, U. S. A., J. Indust. & Engin. Chem. **11**: 93, 1919.

[17] War Gases and Chemical Warfare, editorial, J. A. M. A. **71**: 1742 (Nov. 23) 1918.

Nor is the story of prophylactic measures against chemical modes of warfare completed with the description of the gas masks. Since most of the casualties from the widely used mustard gas were due to skin burns, it became necessary to devise suitable protective clothing. Gummed suits might be appropriate in winter, but they became a physiologic impossibility in hot days. Yet even this handicap was finally overcome by the designing of suits that were not impermeable to air and moisture, yet absorbed mustard gas vapor.

Some day an orderly account of the almost infinite variety of chemical problems that the government was called on to answer in this war will be written. It will be a story of fascinating interest. We shall learn how one scientist devoted his energies to the production of metal Dewar flasks for providing liquid oxygen to aviators; how another one spent days in finding the best way to disperse toxic solids or liquids, producing a fine powder or mist to penetrate masks; how many others worked unceasingly to synthesize new types of toxic compounds of arsenic or selenium or tellurium, whereupon colleagues tested their pharmacologic potency; how face masks with nondimming eyepieces were made comfortable for working and sleeping hours; how helium was extracted from natural gas to replace hydrogen in balloons. Now that the war is over we can pause to consider innumerable scientific advantages of the ceaseless labor and investigation of the past months. The thought that went into the war work, says a reviewer of its details, cannot be destroyed. The industries have gained much through the personal sacrifices of American chemists; likewise has medicine. The charcoal, the gas mask, the many potent new compounds, the liquid oxygen, the protective clothing, the dispersoids—these and dozens of other discoveries will surely find an application, somehow, somewhere, some day.

FOOD AND METABOLISM

It is becoming a common experience in these days to speak of food in terms of calories rather than ounces, and to make comparisons between different nutrient substances on the basis of their so-called energy or fuel values. The ordinary student of nutrition, as well as the casual reader of dietetic literature, is more than likely to gain the impression that, calory for calory, most foods are interchangeable so far as their nutritive value is concerned. The inadequacy of such a conclusion has repeatedly been emphasized in these columns. The food calorimeter gives no indication of the factor of digestibility, for example, without which concentrated calories are quite as worthless for human physiologic purposes as is a piece of anthracite coal. There is, furthermore, a growing realization of the inadequacy of the hypothesis of the "isodynamic replacement" or equivalence of foods which was so generally taught a few years ago. The ingestion of various foodstuffs is followed by an increased heat production, which Rubner designated as their "specific dynamic action" and which has proved to be somewhat of an obstacle to the acceptance of any simple theory of equivalence of food calories in nutrition.

For a long time the easiest explanation of the increase in metabolism after food ingestion was that it represents actual physiologic work and expenditure of energy incidental to the increased activity of the intestinal tract in the presence of dietary substances. Rubner has always denied this view, which was championed by the physiologist Zuntz. In an interesting symposium on the subject before the Fifteenth International Congress on Hygiene and Demography,[1] held at Washington in 1912, there was a general agreement that the different foodstuffs actually stimulate the metabolism, and, indeed, in unlike degree. The search for an explanation of this augmentation of metabolism, apart from any external work done, has been continued in the intervening years.

As this stimulation is particularly pronounced after the ingestion of nitrogenous foods in contrast with carbohydrates and fats, attention has largely been centered on the possible effects of absorbed amino-acids on metabolism. Some of the German investigators[2] have contended that "specific dynamic action" is an expression of the changes associated with the denitrification of amino-acids (derived from proteins by digestion) and the process of consequent urea formation. Recent studies of Lusk[3] at the physiologic laboratory of Cornell University, New York City, contradict this view. There is a very marked difference in the capacity of the various familiar amino-acids to increase heat production, quite aside from their behavior as antecedents of urea. In fact, the more probable explanation at present points to the non-nitrogenous rests of the amino-acids—to such compounds as hydroxy acids or keto-acids—as the effective agencies in the increased metabolism following the ingestion of protein. Either similar intermediary products in the breakdown of fats and sugars, or the metabolism due to a great plethora of the latter when they are ingested in abundance, may also occasion increased heat production when nonprotein foods are ingested in a large amount.

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[1] Tr. XV Congr. Hyg. and Demog. 2, 1912.

[2] Grafe, E.: Deutsch. Arch. f. klin. Med. **118**: 1, 1915-1916.

[3] Atkinson, H. V., and Lusk, Graham: Animal Calorimetry, XV, Further Experiments Relative to the Cause of the Specific Dynamic Action of Protein, J. Biol. Chem. **36**: 415, 1918.

The mathematical relation between the increase in heat production due to the ingestion of food and the fuel value of the intake is not inconsiderable in some conditions. Benedict and Carpenter,[4] who have termed it the "cost of digestion," estimate this to be not far from 6 per cent. on the average, in the case of carbohydrates; with fat the increase is about 2 per cent. of the fuel value of the intake, with a protein-rich diet approximately 12 per cent., and with mixed diets 6 per cent. Their experiments in the Carnegie Institution Nutrition Laboratory at Boston indicate that the mere work of mastication, such as would be involved in chewing gum continuously, may determine an increment in the heat production of approximately 17 per cent. Coffee, owing probably to its content of caffein, acts as a stimulant to metabolism. By eating a large meal of mixed foods it is easily possible to stimulate metabolism to 40 per cent. above the resting, basal value for a number of hours, and to 20 per cent. for at least eight hours. In this sense, then, we may truly speak of the stimulating effect of our nutrients in general.

Current Comment

THE VICTORY OVER RABIES

Amid the victories on the European battlefields that have thrilled the hearts of all warm-blooded Americans and every lover of democracy throughout the world, we may well pause for a moment to contemplate another type of victory—man's conquest of rabies, the dire disease that once meant a painful end for most of those who were inoculated with its deadly germs. Year after year the reports of the lives saved by the fruits of Pasteur's pioneer labors in combating the microbial enemies of mankind bring the story of the beneficent influence of this great Frenchman's contribution to medical science. While the names of great generals and distinguished statesmen are attracting foremost attention in the eyes of all the world, and men are rehearsing the conquests and combats of former great struggles, let us not forget the perennial victory over rabies. During the year 1916, according to a report recently issued, 1,008 persons from the district of Lyons received the antirabic treatment at the bacteriologic institute in that city.[1] A single death in this list places the mortality at 0.099 per cent. Since 1900, more than 9,000 persons have received antirabic inoculations, with a total of nine deaths, or 0.09 per cent. The story has become an old one; but it will long bear repetition as an eloquent testimony to the blessings of intelligent scientific research.

THE TOMATO AS AN ANTISCORBUTIC

Several circumstances recently have conspired to direct attention to the problem of antiscorbutics. Scurvy has made its appearance among various groups of persons abroad because of conditions directly or indirectly brought about by the war. The shortage of antiscorbutic green foods in certain areas has emphasized the need of preventive measures that belong at present entirely within the realm of diet. The difficulties of transportation and of food conservation have suggested the employment of products preserved by desiccation or other methods in order that the seasons of plenty may serve the periods of scarcity. Valued antiscorbutics like orange juice have become too expensive for use among the less-well-to-do classes. In view of this situation it is not surprising to find vigorous efforts displayed here and abroad in the attempt to discover "ways and means" out of the impending difficulties. Some of the results achieved have already been outlined in The Journal.[2] Side by side with the juice of the lemon and the swede, the tomato is now worthy of ranking, according to the simultaneously published observations of Hess and Unger[3] at the Bureau of Laboratories in the New York City Department of Health, and of Givens and McClugage[4] at the University of Rochester. Hess and Unger have actually administered canned tomatoes to infants who were receiving pasteurized milk, substituting it in the dietary for orange juice, which has become increasingly expensive. The amount given to babies 3 months or more of age was 15 c.c., half this quantity being given daily to younger infants. The tomatoes have been uniformly well tolerated throughout the summer by babies as young as 1 or 2 months of age. The fact that both the New York and the Rochester investigators found that the methods of preservation—canning and drying, respectively—do not entirely deprive the tomato of antiscorbutic potency gives a welcomed addition to the list of perennially available food products that can be depended on to protect infants, as well as adults likewise depending on restricted diets, from the danger of scurvy.

Increase in Deaths from Illuminating Gas.—The records of the New York City Health Department show that for the first eight weeks of 1918 there have been 232 deaths from illuminating gas, as against 145 during the corresponding period of 1916, an increase of eighty-seven deaths.

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[4] Benedict, F. G., and Carpenter, F. M.: Carnegie Inst. of Washington, Publication 261, 1917.

[1] Rochaix, A.: Le traitement antirabique dans la région lyonnaise (1916), J. de physiol. expér. **17**: 692, 1918.

[2] Further Facts Regarding Antiscorbutics, editorial, J. A. M. A. **72**: 728 (March 8) 1919.

[3] Hess, A. F., and Unger, L. J.: Canned Tomatoes as an Antiscorbutic, Proc. Soc. Exper. Biol. & Med. **16**: 1, 1918.

[4] Givens, M. H., and McClugage, H. B.: Preliminary Observations on the Value of Raw and Dried Tomatoes as Antiscorbutic Foods for Guinea-Pigs, Proc. Soc. Exper. Biol. & Med. **16**: 2, 1918.

Association News

THE ATLANTIC CITY SESSION

Advisory Committee on Scientific Exhibit—Desirability of Early Application for Space

The following Advisory Committee on Scientific Exhibit has been appointed for the Atlantic City Session: Harlow Brooks, New York; A. S. Warthin, Ann Arbor; George Dock, St. Louis; C. C. Bass, New Orleans; Walter B. Cannon, Boston; L. B. Wilson, Rochester, Minn.; William M. L. Coplin, Philadelphia; James T. Case, Battle Creek, Mich.; Joseph C. Bloodgood, Baltimore; E. R. LeCount, Chicago; Oscar Klotz, Pittsburgh, and F. P. Gay, Berkeley, Calif.

The Scientific Exhibit will occupy the pavilion of the new steel pier. Applications for space may be secured from the Director of the Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. In order that suitable plans may be made, it is desirable that applications be submitted as early as possible.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 7, the Medical Corps contained 21,103 officers, a decrease from the previous week of 442. The Medical Reserve Corps contained 876 officers. The total number of medical officers discharged since the beginning of the war is 12,458.

Medical Veterans of the World War

Physicians who rendered service to the government during the world war either as officers of the Medical Corps of the U. S. Army, of the U. S. Navy or of the U. S. Public Health Service; as contract surgeons in the U. S. Army or acting assistant surgeons of the U. S. Public Health Service; as medical members of Local Boards, or members of the Medical Advisory Boards, are eligible to membership in the Medical Veterans of the World War. As previously announced, Col. F. F. Russell, Army Medical School, Washington, D. C., is secretary of the temporary organization. Those interested should write to him for forms for making application for membership. With these applications there should be forwarded $1 in payment of the first year's annual dues.

Distinguished Service Medal Awards

By direction of the President, the Distinguished Service Medal is awarded for exceptionally meritorious and conspicuous service to the following named officers:

EDWARD L. MUNSON, Brig.-Gen., M. C., U. S. Army, for exceptionally meritorious and conspicuous service. He developed the scheme of field training for officers and enlisted men of the Medical Department, directed the organization and administration of the medical officers' training camps, and organized and administered the Morale Branch of the General Staff.

THEODORE C. LYSTER, Col., M. C., U. S. Army, for exceptionally meritorious and conspicuous service; for duty rendered in the Office of the Surgeon-General as Chief, Air Service Division.

Prisoners Released

The following officers, who have been prisoners in Germany, are reported to have been released from German camps and hospitals and returned to France: Frank K. Miller, Madera, Pa., and Abraham Julius Gordon, Newark, N. J., Lieuts., M. C., U. S. Army.

Wounded Severely

The following officers are reported in the *Official Bulletin* as having been wounded severely: Raymond C. Turck, Lieut.-Col., M. C., U. S. Army, Jacksonville, Fla.; Horatio N. Jackson, Major, M. C., U. S. Army, Burlington, Vt.; Russell Rulo Heim, Capt., M. C., U. S. Army, Grantsburg, Wis., and Ernest J. Hoover, Altoona, Pa.; Claude Edwin Snyder, Altoona, Pa.; Wesley J. C. Wiemers, Houston, Texas, and Lloyd Edward Wurster, Linden, Pa., Lieuts., M. C., U. S. Army.

Wounded Slightly

The following officers are reported in the *Official Bulletin* to have been slightly wounded: Walter J. Johnson, Frankewing, Tenn.; Edward J. Kennedy, Milford, Ohio; David Sussler, Dorchester, Mass.; Joseph K. Surls, Brookline, Mass.; Milton C. Wiggins, Cottagegrove, Tenn.; Schuyler Colfax Harbour, St. Louis, Mo.; Lester L. Powell, Saco, Mo.; Alfred M. Bergstein, Pottsville, Pa.; Clarence H. Denser, Xenia, Ohio, and Eugene Rank Cocke, Asheville, N. C., Lieuts., M. C., U. S. Army, and Harold F. Park, Boston, Mass., Capt., M. C., U. S. Army.

Wounded, Degree Undetermined

The following officers are reported in the *Official Bulletin* as having been wounded (degree undetermined): Adolph Francis Srb, Dodge, Neb.; William L. Hanson, Belleville, Ill.; Lorens A. Haug, Canton, S. C.; Edwing E. Miller, *Nashville, Tenn.; Eugene Henry McCaffrey, Maquoketa,* Iowa; Alton W. Davis, Mitchell, Ga.; Farrar B. Parker, New Orleans; John Browning Baldwin, Marshall, Texas, and John Logan Steffy, Pittsburgh, Lieuts., M. C., U. S. Army, and Harold H. Freund, New York; Frederick R. Hickey, Manhattan, Kan.; John Armstead Winstead, Nashville, N. C., and Chester L. Barry, Oxford, Pa., Capts., M. C., U. S. Army.

Military Cross Awards

King George V, March 5, conferred the Military Cross on the following medical officers: Edward A. Christofferson, Capt., M. C., U. S. Army, Chicago; Alexander J. Gillis, Baltimore, and Robert B. MacDuff, Flint, Mich., Lieuts., M. C., U. S. Army; William L. Smith Capt., M. C., U. S. Army, Toledo, Ill., and Frederick B. Little, Capt., M. C., U. S. Army, Uniontown, Pa., for bravery under fire.——The Military Cross was awarded to Thomas L. Doyle, Capt., M. C., U. S. Army, Tremont, Pa., for "great gallantry and devotion to duty in dressing the wounded under continuous shell fire for seven days during the battle of Saint Quentin Canal, said duty being performed in open with no protection, being exposed continually to enemy machine gun and shell fire."

Receives Medal of Honor

Clarence C. Burlingame, Lieut., M. C., U. S. Army, South Manchester, Conn., on duty with the American Red Cross in France was decorated, Dec. 24, 1918, by the French government with the Medal of Honor of the first class. The diploma accompanying the medal reads: "In the name of the President of the Republic, the minister of war bestows a Medal of Honor in vermeil on Dr. Burlingame. He has given his most precious services for the organization and installation of numerous medical formations where French wounded have been taken care of, especial mention being made for work during the grip epidemic. Dr. Burlingame is authorized to wear this medal suspended by the tricolor ribbon equally divided. This diploma has been delivered in order to perpetuate in his family and among his fellow citizens the memory of his honorable and courageous conduct."

Victoria Cross Awarded

The British military authorities have awarded the Victoria Cross, the highest appreciation for bravery in their power to bestow, to Bellenden Seymour Hutcheson, Capt., M. C., U. S. Army, Mound City, Ill. Captain Hutcheson was attached to the 97th Canadian Battalion, and on going to the battle front was appointed medical officer of the 75th (Toronto) Battalion of the first Central Ontario Regiment. The official record states that the award was bestowed on him "for most conspicuous bravery and devotion to duty, Sept. 2, 1918, when under most intense shell, machine gun and rifle fire, he went through the Quéant-Drocourt support line with his battalion. Without hesitation and with utter disregard of personal safety he remained on the field until every wounded man had been attended to. Captain Hutcheson performed many similar gallant acts, and by his coolness and devotion to duty many lives were saved."

Win War Crosses

George Harrison, Capt., M. C., U. S. Army, Ashland, Wis., on duty overseas, was awarded the Croix de Guerre at Toul by French authorities for extraordinary bravery under fire.——Bertram Tremblay, Lieut., M. C., U. S. Army, Manchester, N. H., has been awarded the Croix de Guerre.——Ivor D. Fenton, Capt., M. C., U. S. Army, on duty with the 315th U. S. Infantry, has been recommended for the Croix de Guerre for gallant service in the Argonne Forest.——Robert J. Lawler, Major, M. C., U. S. Army, Niagara Falls, N. Y., on duty with the Fifth Regiment, has been awarded the Croix de Guerre.——David Reynolds Morgan, Capt., M. C., U. S. Army, Edwardsville, Pa., three times cited for bravery, has been awarded the Croix de Guerre.——C. P. Price, Lieut. M. C., U. S. Army, Mercer, Ky., on duty with the Seventeenth Field Artillery, Second Division, has been awarded the Croix de Guerre for conspicuous bravery at the battle in the Blanc Mont sector.

Abandonment of Army Hospitals

With the abandonment of a number of Army camps and the concentration of sick and wounded soldiers in city hospitals, the Surgeon-General of the Army is taking steps to discontinue several camp hospitals. The base hospitals at Camps Cody, N. M.; MacArthur, Texas, and Hancock, Ga., and General Hospitals No. 18, at Waynesville, N. C., and No. 23 at Hot Springs, N. C., are slated for abandonment at an early date. In addition, it is also proposed to discontinue base hospitals at Camps Greene, N. C.; McClellan, Ala.; Sevier, S. C.; Wheeler, Ga.; and General Hospitals No. 15, at Corpus Cristi, Texas; No. 17, at Markleton, Pa.; No. 37, at Madison Barracks, N. Y., and Debarkation Hospital No. 52, at Richmond, Va. The capacity of the hospital at Camp Kearney, Calif., will be reduced to 500 beds. The Surgeon-General has recommended that General Hospital No. 33 at Fort Logan H. Roots, Ark., be changed to a post hospital, and that the post hospitals at Edgewood, Md., Arsenal, Eustis and Humphreys, Va., be made camp hospitals. No more overseas patients will be sent to any of the foregoing hospitals, except Camp Kearney.

Weekly Bulletin, A. E. F.

(Feb. 3, 1919)

PROMOTIONS

As stated last week, on Jan. 16, 1919, the chief surgeon forwarded [to G. H. Q. through headquarters, S. O. S.] a list of recommendations for promotion embracing eighty-five lieutenant-colonels to grade of colonel, 282 majors to grade of lieutenant-colonel, 932 captains to grade of major, and 2,457 lieutenants to grade of captain. In sending this list the comment is made that it is certain that many of the medical officers serving with the British have not received the promotion to which the law and the character of their services have entitled them. They have failed to get their merited promotion because in addition to the obstacles, delays and accidents which have been incidental to the history of promotions in the A. E. F. there was the added delay of mail communication with the B. E. F., and the great difficulty in getting from the 900 or more officers on duty with the British the reports of character of service and qualifications on which the roster was based which determined their promotion, up to and including major.

The necessity for making promotions in the Medical Corps of the A. E. F. has been especially urgent because most of the reserve corps officers were commissioned in the lowest grade (first lieutenant), which was originally the only one, including men who had been fifteen or twenty years in practice. It was the intention of the Surgeon-General to give these men prompt promotion as soon as their fitness for positions of increased responsibility was demonstrated, but the machinery for promotion has presented unexpected difficulties in the A. E. F., and therefore we find the proportion of lieutenants to be about 60 per cent. instead of the 14 per cent. provided by law.

Very few promotions were made during the first ten months of the existence of the American Expeditionary Forces. Those proposed by the chief surgeon were, as a rule, disapproved on the ground that definite and methodical scheme of promotion, which would, as nearly as possible, do justice to all, should be presented before the commander-in-chief would be willing to make promotions except in very exceptional cases. Such a scheme was finally worked out and presented to the commanding general on May 17, 1918.

This plan was for the application of the principle of selection for the grade of captain and major by means of a roster on which each man took his place according to a roster number obtained by the addition of certain factors which were:

1. Age, which represents in a general way professional experience.
2. Military service, which represents military experience.
3. Character of service and special qualifications, which are given a numerical value in accordance with a special report made in each case by the immediate superior officer.

This scheme was approved in principle, May 31, and finally approved by the commander-in-chief, June 27. The first list was forwarded on June 15 and five others in July. A number of other lists were forwarded in August. All lists after September 4 were held at general headquarters for action there under G. O. 78. Promotions of lieutenants, however, were not cabled to Washington but sent by courier and even in the case of those of higher grades the inevitable delays in the War Department made the process of getting through a promotion very slow. The entire summer passed without any promotions being received by medical reserve officers except one group on June 6. It was recently discovered that the list which was forwarded from this office on August 21 and sent by cable to the adjutant-general on September 2 was apparently never received but apparently lost in the cable office. This list contained the names of fifty-four captains recommended for promotion to major. A letter was recently written requesting that these nominations, which received the approval of the commander-in-chief more than four months ago, be now published as promotions of that date.

The chief surgeon was informed on September 4 by the Adjutant General, A. E. F., that a new War Department General Order on the subject of promotions (G. O. 78, W. D., Aug. 22, 1918) was enroute from the United States. It was hoped that this order, which authorized promotions to be made by the commander-in-chief up to and including the grade of colonel, subject to confirmation by the War Department, would greatly simplify and expedite promotions. This expectation was, however, disappointed because the opinion was advanced that in order to determine the question of whether vacancies existed an approved table of organization was necessary. It was then pointed out by the chief surgeon that as the law provided that there should be a certain proportion of medical officers in each grade, the number of vacancies in each grade could be readily determined by applying the proportions to the total number of medical officers in the A. E. F. The opinion was then expressed by the Judge Advocate's Office that the Surgeon-General should be a party to this arrangement in order that the legal proportions in each grade should not be exceeded for the Medical Department with the other forces. The question of the applicability of General Order 78 to the Medical Department was finally referred to the War Department by cablegram of the commander-in-chief dated October 11, which was replied to by the chief of staff on October 19, stating it *did not apply* to officers in the Medical Department. It is understood that the negative in this cable was an error in coding. When the matter was again presented by the commander-in-chief on October 28, for reconsideration he was informed by cable of November 5, that his request for authority to promote medical officers was approved. The chief surgeon was informed of this decision on November 7, but four days later the armistice was signed and stopped all temporary promotions. During this short period, however, 672 medical, thirty-two sanitary, and fifty-three veterinary officers were promoted.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Crispin, E. L.
Palo Alto—Williams, T. M.
San Francisco—Vogel, A. B.

DISTRICT OF COLUMBIA

Washington—Crawford, C. B.

ILLINOIS

Dixon—Thompson, W. A.

KANSAS

Kansas City—Little, A. W.

MASSACHUSETTS

Cambridge—Dow, D. C.

NEW JERSEY

Jersey City—McLaughlin, G. E.

NORTH CAROLINA

New Bern—Jones, R. D.

OREGON

Marshfield—McCall, R. G.

PENNSYLVANIA

Philadelphia—LeConte, R. G.
Talley, J. E.

PHILIPPINE ISLANDS

Manila—Reed, J. E.

RHODE ISLAND

Providence—Mathews, F. H.
Porter, L. B.

WISCONSIN

Madison—Opstedal, J. A.
Wauwatosa—Van De Erne, J.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—Boxer, H. (C.)
Hardy, W. B. (L.)
McAlester, J. S. (L. C.)
Scott, W. F. (M.)
Boaz—Cooley, B. S. (L.)
Jackson—Bedsole, J. G. (L.)
Selma—Elebash, C. C. (L.)
Silas—Tayler, E. E. (L.)
Tuscaloosa—Moody, M. (C.)

ARIZONA

Buckeye—Hughes, H. A., Jr., (L.)
Globe—Adams, C. W. (L.)

ARKANSAS

Fort Smith—Dorante, D. R. (C.)
Hermitage—Wilson, G. L. (L.)
Hot Springs—Thompson, L. (M.)
Wade, H. K. (L.)
Hughes—Pollard, E. W. (L.)
Leslie—Hollabaugh, C. B. (L.)
Little Rock—Freemyer, W. N. (L.)
Hinkle, S. B. (C.)
Lee, D. C. (L.)
Monticello—Cotham, E. R. (C.)
Texarkana—Fuller, T. E. (L.)

CALIFORNIA

Bakersfield—Smith, J. K. (L.)
Byron Hot Springs—Smithwick, J. M. (L.)
Long Beach—Keller, W. F. (L.)
Los Angeles—Duncan, W. C. (L.)
Heffelfinger, M. A. (C.)
Wiley, E. H., Jr., (C.)
Oakland—Koford, H. (L.)
Sampson, J. H. (C.)
Oakville—Leonhardt, S. C. (C.)
Orange—Chapline, F. L. (C.)
Pasadena—Hansen, C. O. (C.)
Sacramento—Hale, N. G. (L.)
San Bernardino—Blair, E. S. (C.)
San Francisco—Best, E. J. (C.)
Roche, T. B. (C.)
Ruggles, H. E. (C.)
Winterberg, W. H. (L. C.)
San Mateo—Chidester, W. C. (M.)
Willows—Lawson, F. M. (L.)

COLORADO

Crawford—Duncan, O. A. (L.)
Denver—Bell, C. C. (L.)
Drinkwater, R. L. (M.)
Hough, L. (C.)
Julesburg—Dutton, F. G. (L.)
Lamar—Likes, L. E. (L.)
Milliken—Fuson, C. C. (C.)

CONNECTICUT

Hartford—Smith, E. T. (M.)
Wells, D. B. (C.)
Milford—Heady, C. K. (L.)
Naugatuck—Dayton, A. B. (L.)
New Haven—Arnold, H. S. (M.)
Flint, J. M. (L. C.)
Porter, D. W. (C.)
Welch, H. L. (C.)

DISTRICT OF COLUMBIA

Washington—Digges, J. H. (C.)
McCandlish, H. S. (L.)
Mitchell, J. F. (L. C.)
Seibert, E. G. (L. C.)

FLORIDA

Fountain—Pennington, J. L. (L.)
Hastings—Padgett, B. L. (L.)
Inverness—Cranford, J. F. (L.)
Jacksonville — Livingston, J. A. (M.)

GEORGIA

Grayson—Dickens, C. H. (L.)
Pembroke—Strickland, J. O. (L.)
Ray City—Anderson, G. M. (C.)
Savannah—Howard, L. (L.)
Jones, J. P. (L.)
Valdosta—Smith, T. H. (L.)

HAWAII

Honolulu—Ketchum, W. H. (C.)
Milnor, G. C. (L.)

IDAHO

Pocatello—Howard, W. F. (C.)

ILLINOIS

Algonquin—Pillinger, H. H. (C.)
Alton—Williamson, M. R. (L.)
Antioch—Turner, J. A. (L.)
Bradford—Chrisman, W. D. (L.)
Chatsworth—Palmer, F. W. (L.)
Chicago—Carr, J. G. (C.)
Case, J. T. (L. C.)
Farley, R. T. (L.)
Finsand, V. (L.)
Frothingham, H. H. (M.)
Halstead, A. E. (L. C.)
Huggard, T. S. (L.)
Jones, J. G. (L.)
Kappleman, J. A. (C.)
Kepner, R. B. (L.)
Kleutgen, A. C. (C.)
Kuhns, R. H. (C.)
Leight, C. W. (M.)
May, H. F., (L.)
McGrath, W. D. (L.)
Meloy, W. W. (C.)
Novy, B. N. (L.)
Percy, N. M. (L. C.)
Preble, R. B. (L. C.)
Schick, F. J. (L.)
Scott, O. F. (C.)
Siegler, W. J. (L.)
Silverstein, W. I. (L.)
Stevenson, W. W. (L.)
Swanson, H. T. (L.)
Thorpe, J. N. (M.)
Wermuth, A. W. (C.)
Williamson, C. S. (L. C.)
Cooksville—Swinehart, B. O. (L.)
Dixon—Robbins, C. A. (C.)
East St. Louis—Barker, R. F. (L.)
Elmhurst—Berkey, H. A. (L.)
Granite City—Schroeder, H. C. H. (L.)
Highland Park—Moore, A. O. (L.)
Kewanee—Fischer, H. L. (L.)
La Salle—Woods, R. H. (L.)
Litchfield—Griswold, R. W. (C.)
Oak Park—Savage, R. G. (L.)
Utley, R. E. (L.)
Ottawa—O'Conor, V. J. (L.)
Pleasant Plains—Huber, F. D. (L.)
Rockford—Elvidge, R. E. (L.)
Rushville—Munson, H. O. (C.)
Sadorus—Bundy, C. D. (C.)
Savanna—Cottral, G. H. (C.)
Springfield—Herndon, R. F. (L.)
Smith, E. D. (L.)
Streator—Reno, C. G. (L.)
Toledo—Smith, W. L. (C.)
Urbana—Gulick, C. D. (L.)
Watseka—Ross, G. W. (L.)
Wheeler—Wishard, R. S. (C.)
Winchester—Fletcher, H. H. (L.)

INDIANA

Ashley—Darnelle, T. E. (L.)
Bloomington—Gardner, F. (M.)
Chalmers—Coyner, A. B. (L.)
Delphi—Carney, J. R. (L.)
Evansville—Frick, H. C. (L.)
Indianapolis—Edwards, S. R. (L.)
Egart, S. L. (C.)
Jackson, F. E. (L.)
Keene, T. B. V. (L. C.)
Leak, S. O. (C.)
Patton, M. T. (L.)
Truitt, F. L. (L.)
Jeffersonville—Walker, J. H. (C.)
La Fayette—McClelland, D. C. (C.)
Linden—Rhea, J. O. (M.)
Logansport—Hare, J. H. (L.)
Manilla—Inlow, W. D. (L.)
Redkey—Markeley, H. W. (L.)
Rushville—Green, F. H. (C.)
Green, L. M. (C.)
Valparaiso—Young, S. J. (L. C.)
Warsaw—Truelove, A. O. (L.)
Westville—Nelson, E. G. (L.)

IOWA

Ames—Bush, E. B. (M.)
Andrew—Rantz, W. L. (L.)
Burlington—Schaefer, P. H. (C.)
Cherokee—Pennington, L. E. (L.)
Columbus Junction—Hubbard, F. A. (L.)
Council Bluffs—Bellinger, S. B. (L.)
Dubuque—Lewis, E. R. (L. C.)
Emmetsburg — Brereton, H. L. (L.)
Fort Dodge—Carver, W. F. (C.)
Iowa City—Von Lackum, H. L. (L.)
Yoder, E. C. (L.)
Jefferson—Hamilton, B. C., Jr. (L.)
Keswick—Harlan, C. D. (C.)
Maynard—Baker, J. E. (L.)
Remsen—Hombach, W. H. (L.)
Shenandoah—Barnes, B. S. (L.)
Truro—Winter, M. D. (L.)
Washington—Masson, H. F. (L.)
Waukon—Morehouse, C. G. (C.)
Williamsburg—Sinn, I. J. (L.)
Woodward—Darche, A. L. (L.)

KANSAS

Ashton—Beatson, L. M. (L.)
Burlingame—Naylor, N. E. (L.)
Caldwell—Kisecker, D. E. (L.)
Chanute—Hickey, F. R. (C.)
Hudson—Liston, O. (C.)
Independence — Shepard, C. O. (L.)
Maplehill—King, G. A. (L.)
Newton—Peppers, J. L. (L.)
Parsons—Missildine, J. G. (L.)

KENTUCKY

Anchorage—Burnett, E. D. (L.)
Barbourville—Logan, L. (C.)
Bellevue—Keeney, P. G. (C.)
Bowling Green—Blackburn, J. H. (L. C.)
Canmer—Moore, C. H. (L.)
Central City—Tuldesley, H. (L.)
Dayton—Bergmeyer, O. N. (L.)
Elkton—Weathers, E. W. (L.)
Fredonia—Spickard, L. J. (L.)
Harlan—Nolan, J. W. (C.)
La Center—Hahs, J. F. (L.)
Overby, B. C. (L.)
Lexington—Briggs, W. T. (L.)
Louisville—Day, G. H. (M.)
Levi, W. D. (L.)
Lukins, J. B. (L.)
Owen, E. E. (L.)
Lynn Grove—Jones, C. H. (L.)
Mayfield—Belote, G. (L.)
Mays Lick—Yancy, H. M. (L.)
Newport—Hughes, W. B. (L.)
Sutter, H. A. (L.)
North Fork—Robb, T. J. (L.)
Paris—Stern, M. J. (L.)
Stone—Boland, L. F. (M.)
Webbs—Graham, J. C. (L.)

LOUISIANA

Jackson—Evans, T. W. (C.)
New Orleans—Braud, S. F. (C.)
Carter, P. J. (L.)
Fenno, F. L. (L.)
Halsey, J. T. (M.)
Singleton, J. M. (L.)
Stone, R. E. (C.)
Shreveport — Ledbetter, W. M. (L.)

MAINE

Bath—Mullin, S. S. (C.)
Portland—Cousins, W. L. (M.)
Rumford—Stanwood, A. L. (L.)
Waterville—Bisson, N. (L.)

MARYLAND

Baltimore—Akehurst, J. S. (L.)
Baetjer, W. A. (M.)
Bernheim, B. M. (M.)
DeHoff, G. W. (L.)
Evans, J. (L.)
Fenby, J. S. (L.)
Heuer, G. J. (M.)
Hoffman, R. V. (L.)
Jenkins, W. H. (L.)
Jennings, F. L. (L.)
Rauschenbach, C. W. (C.)
Smith, W. H. (C.)
Spencer, H. R. (L.)
Savage—Shipley, F. E. (L.)

MASSACHUSETTS

Boston—Bearse, C. (L.)
Cabot, R. C. (L. C.)
Cannon, W. B. (L. C.)
Chandler, H. B. (L.)
Lyon, A. B. (C.)
Nichols, E. H. (L. C.)
Rogers, M. H. (M.)
Sooner, L. H. (M.)
Stevens, H. B. (C.)
Cambridge—Cogswell, G. P. (C.)
Graniteville—Sherman, W. H.(L.)
Greenfield—Kemp, H. M. (L.)
Haverhill—Holbrook, C. A. (C.)
Holyoke—Bigelow, J. B. (L.)
Gabler, G. L. (C.)
Hand, E. P. (L.)
Lynn—Joslyn, A. E. (C.)
Mansfield—Allen, W. H. (C.)
Newton—Hanscom, R. F. (L.)
Pittsfield—Peterson, A. F. (C.)
Springfield—Chereskin, J. L. (L.)
Harriman, D. E. (L.)
Rumrill, S. D. (C.)
West Brookfield—Huyck, C. J. (C.)
Winchester—Cutter, I. T. (M.)
Worcester—Ljungberg, D. G. (L.)

MICHIGAN

Ann Arbor—Breakey, J. F. (M.)
Galbraith, E. G. (L.)
Charlotte—Stealy, S. A. (L.)
Copemish—Huston, R. R. (L.)
Deerfield—Claflin, G. M. (M.)
Detroit—Carey, C. (L.)
Foley, C. J. (L.)
Jentgen, C. J. (L.)
May, E. W. (L.)
Merrill, C. H. (C.)
Northrup, H. E. (L.)
Persley, A. B. (L.)
Rosenthal, J. (C.)
Sutherland, J. M. (L.)
Grand Rapids—Urquhart, R. T. (C.)
Hickory Corners—Singleton, W. A. (L.)
Highland Park—Braley, W. N. (L.)
Jackson—DeMay, C. E. (L.)
Lansing—Rulison, J. G. (L.)
Saugatuck—Walker, R. J. (L.)

MINNESOTA

Albert Lea—Palmer, W. L. (C.)
Fergus Falls—Folsom, S. D. (L.)
Lowry—Sargeant, H. L. (L.)
Minneapolis—Camp, W. E. (L.)
Hall, J. M. (L.)
Hansen, H. C. (L.)
Law, A. A. (L. C.)
Newkirk, H. D. (L.)
Pederson, R. M. (L. C.)
Smith, T. B. (L.)
Montgomery—McKeon, J. O. (C.)
North St. Paul—Cowren, E. W. (L.)
Pine City—Tofte, A. A. (L.)
Rochester—Boothby, W. M. (M.)
Mayo, C. T. (Col.)
Spring Valley—Johnson, C. H. (L.)
St. Paul—Drake, C. B. (L.)
Savage, F. J. (C.)
Wold, K. C. (L.)
Wilmont—Waller, J. D. (L.)

MISSISSIPPI

Canton—Bell, C. G. (C.)
Lambert—McVey, E. A. (C.)
Meridian—Hart, L. (C.)
Shuqualak—Kellis, J. H. (L.)
Torrance—Sayle, D. T. (L.)
Tupelo—Toomer, W. A. (L.)
Winona—O'Cain, E. C. (L.)

MISSOURI

Bernie—Sayre, R. W. (L.)
Cabool—Edens, L. M. (L.)
Columbia—Ravenel, M. P. (L. C.)
Farmington—Watkins, G. L. (L.)
Gallatin—Netherton, E. W. (L.)
Helena—Carpenter, E. H. (C.)
Kansas City—Blakesley, T. S. (M.)
Brewster, R. B. (C.)
Lichtenberg, J. S. (C.)
Lynch, J. C. (C.)
Middlebrook, R., Jr. (C.)
Robinson, G. W. (M.)
La Belle—Wilson, R. E. (C.)
Maryville—Rowlett, H. S. (C.)
Norwood—Ellis, R. V. (L.)
Pattonville—Coleman, H. T. (L.)
Rayville—Gaines, G. W. (L.)
Sedalia—Duckworth, W. H. (L.)
Silex—Barrymore, E. (C.)
Springfield—Dewey, J. E. (C.)
St. Louis—Ferris, J. L. (L.)
Fleischman, J. C. (L.)
Johnson, R. W. (L.)
Krebs, F. J. V. (C.)
Murphy, F. T. (Col.)
Nelson, W. L. (C.)
Pfeffer, F. J. (C.)
Sale, L. (L. C.)
Thompson, J. C. (L.)
Tonelli, G. L. (L.)
York, W. B. (L.)
Young, A. O. (L.)

MONTANA

Belgrade—Braybeal, J. M. (L.)
Broadview—Abbott, F. E. (L.)
Columbus—Gardner, C. A. (L.)
Crow Agency—Townsend, B. I. (L.)

NEBRASKA

Pellwood—McNally, J. M. (L.)
Blue Hill—Bartholomew, P. H. (M.)
Grand Island—McGrath, B. R. (C.)
Lincoln—Metheny, H. B. (L.)
Munger, A. D. (C.)
Newman Grove—Frink, F. L. (C.)
Omaha—Henry, E. C. (M.)
Mick, W. H. (C.)
Talcott, V. V. (L.)
Salem—Smith, A. J. (L.)
Tekamah—Wood, M. (C.)

NEVADA

Ely—Holmquist, W. S. (C.)
Reno—Ostroff, H. (C.)

NEW HAMPSHIRE

Goffstown—Stark, M. A. (L.)
Sanbornville—Eckhardt, J. C. (L.)
Wolfeboro—Clow, F. E. (L.)

NEW JERSEY

Atlantic City—Canning, C. H. (L.)
Davis, W. P., Jr. (L.)
Camden—Becker, C. F. (L.)
Cedar Grove—Snavely, E. H (L.)
Elmer—Reeves, J. F. (C.)
Hoboken—Granelli, M. S. (C.)
Paganelli, J. E. (C.)
Jersey City—Abels, R. N. (L.)
Newark—Abramowitz, A. B. (L.)
Amols, A. (L.)
Epstein, H. B. (L.)
Stahl, A. (L.)
Titus, C. W. (L.)
Paterson—Van Noort, F. J. (L.)
Rahway—Gallaway, G. E. (L.)
Trenton—Seibert, R. S. (C.)

NEW MEXICO

East Las Vegas—Crail, F. H. (L.)
Silver City—Westlake, O. J. (C.)

NEW YORK

Albany—Gorham, L. W (C.)
O'Keeffe, D. F. (L.)
Southwell, J. F. (C.)
Albion—Elson, J. A. (C.)
Broad Channel—Both, J. L. (L.)
Brooklyn—Feller, A. A. (L.)
Goldstein, N. A. (L.)
Kogut, A. (L.)
Lesser, L. M. (L.)
McCaul, N. J. (L.)
Schneikraut, I. S. (L.)
Senger, F. L., Jr. (C.)
Shipley, A. E. (M.)
Buffalo—Fischer, U. A. (L.)
Russell, N. G. (L. C.)
Schuhr, H. C. (L.)
Clinton—MacFarland, E. G. (C.)
Cuba—Bond, T. B. (C.)
Deposit—Axtell, C. M. (L.)
Elmira—Lande, A. (L.)
Tillou, D. J. (L.)
Gloversville—Palmer, R. M. (L.)
Groton—Van Marter J. H. (C.)
Herkimer—Cole, F. S. (M.)
Holley—Nesbitt, C. C. (L.)
Jamaica—Kilcourse, J. J. (L.)
Mount Vernon—Hughes, J. J. (C.)
Johnson, C. W. (L.)
New York—Bailey, P. (Col.)
Beer, E. (M.)
Bishop, F. W. (L.)
Brickner, W. M. (M.)
Burnap, S. R. (M.)
Caldwell, W. E. (C.)
Cole, L. G. (M.)
Compton, H. T. (L.)
Elwyn, H. (C.)
Forbes, H. H. (C.)
Garbat, A. L. (C.)
Girsdansky, J. (M.)
Helmick, P. L. (C.)
Hiss, J. G. F. (L.)
Hunt, J. P. (C.)
Imperatori, C. J. (L. C.)
Isaacs, H. J. (L.)
Klarfeld, H. (L.)
Lee, B. J. (L. C.)
Longcope, W. T. (Col.)
Lutz, C. (L.)
McCullagh, S. (L. C.)
Morgenlender, A. M. (L.)
Nagle, J. F. (M.)
Rothschild, M. A. (M.)
Safian, J. (L.)
Satterlee, H. S. (L. C.)
Spitzka, E. A. (L. C.)
Valensi, A. (L.)
Westmoreland, F. S. (L.)
Wovschin, W. (L.)
Rochester—Bradstreet, S. W. (C.)
Jones, W. B. (C.)
Vetter, G. V. (L.)
Schenectady—Howland, C. A. (C.)
McPartlon, P. (C.)
Pearson, J. (C.)
Sparkill—Knipe, J. B. (C.)
Syracuse—Alsever, W. D. (M.)
Getman, A. A. (L.)
Moore, B. S. (C.)
Woodhaven—Baetz, W. G. (C.)

NORTH CAROLINA

Burlington—Vernon, C. T. (L.)
Charlotte—Moore, A. W. (C.)
Duke—Ruff, F. R. (L.)
Mars Hill—Stringfield, O. L., Jr. (C.)
Newton—Rowe, H. E. (L.)
Randleman—Tidmarsh, H. W. (L.)
Salisbury—Spencer, F. B. (L.)
Tarboro—Raby, J. G. (L.)
Winston-Salem—Craig, S. D. (M.)

NORTH DAKOTA

Edgeley—Meigs, B. L. (L.)

OHIO

Ada—Neiswander, L. C. (L.)
Akron—Blower, J. G. (C.)
Fox, W. L. (L.)
Read, F. K. (L.)
Alliance—Mutschman, L. F. (L.)
Ashland—Crawford, R. B. (L.)
Barberton—Stepfield, R. E. (L.)
Bristolville — Thompsson, J. E. (L.)
Cincinnati—Critchlow, M. M. (L.)
Majcowsky, L. R. (L.)
Schneider, H. M. (L.)
Cleveland—Beach, P. E. (L.)
Carter, A. T. (L.)
Cowles, E. C. (C.)
Dexter, R. (L. C.)
Gillespie, R. J. (L.)
Lowry, W. P. (L.)
Paul, L. J. (L.)
Robinson, A. S. (C.)
Sexton, F. E. (L.)
Skeel, R. E. (M.)
Strauss, A. (L.)
Treister, C. D. (C.)
Wood, F. J. (C.)
Columbus—Mixson, A. H. (L.)
McNerney, J. D. (L.)
Crooksville—Allen, E. D. (L.)
Hamilton—Schell, H. D. (L.)
Hubbard—Minahan, T. A. (L.)
Lima—Sibert, A. V. (L.)
Miamisburg—Hunt, C. T. (M.)
Middlepoint—Edwards, S. A. (C.)
Morrow—Krohn, C. P. (C.)
New Somerset—Schilling, R. W. (L.)
Pioneer—Stratton, F. M. (L.)
Spartanburg—Wrightson, W. O. (L.)
Springfield—Poulton, J. H. (L.)
Steubenville—Saxton, S. W. (L.)
Toledo—Black, G. D. (L.)
Kerr, L. E. (L.)
Moor, D. C. (C.)
Tontogany—Peinert, E. F. (L.)
Washington Court House—Decatur, P. E. (L.)
West Unity—Prouty, H. L. (L.)
White Oak Farm—Sawyer, C. W. (L.)
Xenia—McClellan, B. R. (C.)
Youngstown—Clark, C. R. (L. C.)
Morris, C. F. (C.)

OKLAHOMA

Bartlesville—Koppenbrink, W. E. (L.)
Sutton, F. R. (C.)
Charleston—Heady, E. E. (L.)
Coalgate—Rushing, F. E. (L.)
Fargo—Patterson, F. L. (C.)
McAlester—Shaw, C. C. (L.)
Nash—Roberts, D. D. (L.)
Oklahoma City—Davis, S. C. (C.)
Porum—Farris, R. C. (L.)
Sasakwa—Weedn, H. J. (L.)
Shawnee—Hughes, J. E. (C.)
Tulsa—Brown, P. R., Jr. (C.)
McDonough, R. G. (L.)
Velma—Thomasson, E. B. (L.)
Vion—Morris, C. H. (L.)

OREGON

Portland—Knox, W. S. (M.)
Roberts, L. O. (L.)
Shoot, H. E. (L.)
Riddle—Fawcett, A. J. (L.)

PANAMA

Bocas del Toro—McLean, I. W. (C.)

PENNSYLVANIA

Allentown—Arner, O. D. (C.)
Altoona—Bancroft, J. W. (L.)
Avalon—Elliott, A. H. (C.)
Berwyn—Aiken, T. C. (L.)
Bryn Athyn—Olds, C. L. (C.)
Carrick—Harsha, J. V. (C.)
Clark Mills—Mills, T. D. (L.)
Coalport—Hoke, B. H. (C.)
Columbia—Reeser, R. (C.)
Donora—Furlong, R. G. (L.)
Dormont—Rohrkaste, W. C. (L.)
Dorrancetown — Thomas, F. D. (L.)
Erie—Belding, J. E. (C.)
Boughton, G. C. (M.)
Kemble, C. C. (L.)
Lasher, L. A. (L.)
Fayette City—Hackett, G. S. (L.)
Freeburg—Long, D. E. (C.)
Glassport—Feeley, J. B. (L.)
Greensburg—Bortz, W. M. (L.)
Harrisburg—Taylor, W. S. (L.)
Joffre—Scott, W. L. (C.)
Mansfield—Doane, J. H. (C.)
McKees Rocks—Davis, J. R. (L.)
Millville—Gemmill, J. R. (L.)
Morris Run—Wilson, W. C. (C.)
New Cumberland—Luten, H. (M.)
Philadelphia—Baldwin, J. H. (C.)
Bardsley, C. A. (L.)
Bartine, C. O. W. (C.)
Bateman, S. E. (C.)
Bergey, D. H. (M.)
Block, F. B. (L.)
Bolling, R. H. (M.)
Coombs, J. N. (C.)
Dutter, G. E. (L.)
Eshleman, R. H. (M.)
Ferry, A. A. (L.)
Fewell, A. G. (C)
Hitchens, A. P. (M.)
O'Reilly, C. A. (M.)
Purdy, J. (L.)
Reed, H. (L.)
Schafer, C. S. (L.)
Shute, F. R. (M.)
Pittsburgh — Arbuthnot, T. S. (L. C.)
Gangloff, H. M. (L.)
Heard, J. D. (L. C.)
Kelsey, J. S., Jr. (C.)
Kline, R. T. (L.)
Major, R. S. (C.)
Miller, R. T. (L. C.)
Redmond, M. S. (L.)
Williams, V. A. (L.)
[illegible] R. (L. C.)
[illegible] R. D. (L.)
[illegible] D. (L.)
Roaring Springs — Grounds, W. L. (L.)
Scranton—Lewis, J. D. (C.)
Ruddy, J. P. H. (L.)
Sharon—Jones, O. A. (C.)
Tyrone—Bradin, C. C. (L.)
Washington—McKennan, J. W. (C.)
Wilkinsburg — McMurray, T. E. (L.)
Willock—Lake, H. S. (C.)
Zelienople—Whittaker, A. E. (L.)

RHODE ISLAND

Block Island—Perry, C. F. (C.)
Providence—Beckett, F. H. (L.)
Messinger, H. C. (L.)

SOUTH CAROLINA

Aiken—Stone, T. C. (C.)
Charleston—Bold, F. H. (L.)
Douglass, J. E. (L.)
Rhett, R. B. (L.)
Chester—Abell, R. E. (C.)
Greenville—Powe, W. H. (C.)
Lancaster—Poovey, G. W. (C.)
McCormick—Fuller, R. M. (C.)
Walterboro—Ackerman, R. (L.)
Whitmore—Woods, T. B. (L.)

SOUTH DAKOTA

Deadwood—Allen, A. G. (C.)

TENNESSEE

Block—Russell, C. (L.)
Chattanooga—Shumacker, L. (M.)
Garyville—Gallaher, R. L. (C.)
Kingsport—Kinzer, C. S. (L.)
Memphis—Collier, C. (L.)
Meyer, L. L. (C.)
Seligstein, M. B. (L.)
Nashville—Edwards, L. W. (L.)
Glasgow, S. M. (C.)
Trent, L. E. (L.)
Oakdale—Williams, P. S. (L.)

TEXAS

Austin—Mathis, E. G. (C.)
Beaumont—Cobb, C. A. (C.)
Cameron—McGee, D. B. (C.)
Dallas—Smith, H. B. (L.)
Devine—Woods, G. S. (C.)
Donna—Davis, L. M. (L.)
Fort Worth—Gough, R. H. (C.)
Galveston—Cade, W. H., Jr. (L.)
Goree—Woodall, O. L. (L.)
Houston—Hill, J. A. (M.)
Mynatt, A. J. (L.)
La Porte—Griffith, C. W. (C.)
Manor—Jackson, N. R. (L.)
Marshall—Eads, G. L. (L.)
Matado—Hamilton, R. L. (L.)
Palestine—Speegle, A. A. (L.)
Port Arthur—Crumpler, W. E. (L.)
Richmond—Munroe, R. M. (L.)
Sachse—Lyons, E. G. (L.)
San Angelo—Kight, J. R. (C.)
San Antonio—Askew, T. B. (C.)
Sykes, E. M. (L.)
Walthall, T. J. (C.)

UTAH

Salt Lake City—Humphrey, I. K. (C.)
Jellison, R. L. (C.)
Scoyoc, G. V. (C.)
Stigall, C. G. (L.)
Vernal—Christy, G. H. (L.)

VERMONT

Burlington—Crossman, E. O. (C.)
Maynard, R. L. (L.)
Manchester Center—Calahan, L. J. (L.)
Montpelier—Grimes, J. R. (L.)

VIRGINIA

Clifton Forge—Wells, E. D. (L.)
Fairfax—Fletcher, H. (M.)
Gloucester—Stubbs, L. E. (L.)
Grafton—Berkeley, S. B. (L.)
Hopewell—Gill, S. G. (L.)
Midlothian—Tabb, J. L., Jr. (L.)
Norfolk—Rodman, N. F. (L.)
Roanoke—Hagan, H. J. (C.)
Keister, W. S. (L.)
Kirk, T. A. (C.)
Richards, L. G. (L.)
Virgilina—Jordan, R. S. (L.)

WASHINGTON

Colfax—Mitchell, W. A. (L.)
Colville—Goetter, R. F. (L.)
Fairfield—Lewis, C. A. (L.)
Fort Steilacom—Keller, W. N. (M.)
Hoquiam—MacDonald, J. F. (L.)
Seattle—Perry, R. W. (M.)
Spokane—Appleton, W. H. (C.)
Hughes, A. P. (L.)
Rose, F. (C.)
Tacoma—Paul, B. E. (L.)
Tenino—Wichman, F. W. (L.)
Toppenish—Rowland, S. J. (L.)

WEST VIRGINIA

Bluefield—Hoge, A. H. (L.)
Clarksburg—Willis, C. A. (L.)
Davis—Daugherty, L. E. (L.)
Elkins—Owens, H. K. (M.)
Elm Grove—Pedicord, R. M. (C.)
Fairmont—Causey, H. D. (C.)
Moundsville—Striebich, J. A. (L.)
Wayne—Keesee, J. R. (C.)
Weirton—Levendorf, I. (L.)
Widen—Miller, J. E. (L.)

WISCONSIN

Darlington—Quinn, R. B. (L.)
Fort Atkinson—Clark, W. T. (M.)
Fremont—Rehling, C. F. (L.)
La Crosse—Flynn, R. E. (L.)
Manitowoc—Donohue, W. E. (L.)
Marshfield—Potter, R. P. (C.)
Milwaukee—Yates, J. L. (L. C.)
Wauwatosa—Maercklein, O. W. C. (L.)

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Bragg, N. C., from Camp Sheridan, Col. W. M. SMART.

To Camp Knox, Ky., as assistant to camp surgeon, from Camp Sheridan, Major W. O. H. PROSSER.

To Camp Sheridan, Ala., base hospital, from Camp Dix, Lieut. C. R. ATHEY, Ramer.

To Fort McPherson, Ga., from Camp Dix, Capt. T. V. MAGRUDER, Birmingham.

To Newport News, Va., from Camp McClellan, Lieut. J. W. GWIN, Bessemer.

Arizona

To Whipple Barracks, Ariz., from Camp Beauregard, Capt. F. F. MILLER, Miami.

To Williamsbridge, N. Y., from Newport News, Capt. R. E. HERENDEEN, Bisbee.

Arkansas

To Hoboken, N. J., from Carlisle, Lieut. J. B. HESTERLY, Prescott.

California

To Army Medical School, from Camp Greene, Capt. G. B. HAMILTON, Oakland.

To Camp Devens, Mass., base hospital, from Camp Joseph E. Johnston, Major H. S. KEYES, Los Angeles.

To Camp Kearney, Calif., from Canal Zone, Capt. J. N. FORCE, Berkeley. Base hospital, Major C. A. GLOVER, San Francisco.

To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Capt. H. W. WRIGHT, San Francisco; from Camp Kearney, Capt. H. BARKAN, San Francisco; Lieut. J. SWANCOTT, Los Angeles.

To Seven Pines, Va., from Camp Lee, Capt. F. M. TROUT, Los Angeles.

The following orders have been revoked: *To Army Medical School,* for instruction, from Fort Oglethorpe, Capt. J. M. WASTE, San Francisco. *To San Francisco, Calif.,* from Camp Kearney, Major W. C. THOMAS.

Colorado

To report to the commanding general, Western Department, from Camp Lewis, Lieut. G. B. LEWIS, Denver.

Connecticut

To Biltmore, N. C., from Edgewood, Lieut. M. F. CLAFFEY, Naugatuck.

To Williamsbridge, N. Y., from Camp Wheeler, Lieut. C. K. STILLMAN, Mystic.

Delaware

To Washington, D. C., from Otisville; Lieut. B. H. BEELER, Wilmington.

District of Columbia

To Aberdeen, Md., from Camp Dix, Major D. L. HIGH, Washington; from Hoboken, Major T. M. FOLEY, Washington.

To Camp A. A. Humphreys, Va., from Camp Wheeler, Capt. H. W. BARKER, Washington.

To Camp Grant, Ill., base hospital, as commanding general, from Walter Reed General Hospital, Col. W. R. DAVIS.

To Camp Meade, Md., base hospital, from Camp McClellan, Lieut. M. J. HERSCHMAN, Washington.

To Canal Zone, from Surgeon-General's Office, Col. H. C. FISHER.

To Fort Riley, base hospital, from Surgeon-General's Office, Col. G. P. PEED.

To Mineola, N. Y., from Surgeon-General's Office, Lieut.-Col. L. H. BAUER.

To San Juan, P. R., from Army Medical School, Col. E. R. WHITMORE.

To Walter Reed General Hospital, D. C., from Hoboken, Major H. H. KERR, Washington.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Lieut.-Col. J. F. MITCHELL, Washington.

Florida

To Camp Devens, Mass., as commanding officer of base hospital, from Camp Joseph E. Johnston, Lieut.-Col. A. D. DAVIS.

To Camp Jackson, S. C., base hospital, from Camp Greene, Capt. G. DAY, [illegible]

The [illegible] been revoked: *To Camp Dix, N. J.,* base hospita[illegible], Lieut. R. H. KNOWLTON, Petersburg. *To Hoboken, N. J.,* from Camp Dix, Capt. H. C. VON DAHM, Jacksonville.

Georgia

To Camp Beauregard, La., base hospital, from Corpus Christi, Lieut. T. STARR, Calhoun.

To Camp Custer, Mich., base hospital, from Boston, Lieut. J. D. BLACKBURN, Atlanta.

To Camp Holabird, Md., as camp surgeon, from Camp Hancock, Lieut. Col. C. C. HILLMAN.

To Camp Meade, Md. to examine the command for cardiovascular diseases, from Camp Sheridan, Capt. W. R. DANCY, Savannah.

To Fort McPherson, Ga., from Camp Dix, Major F. K. BOLAND, Atlanta.

To report to the commanding general, Southwestern Department, from Camp Joseph E. Johnston, Lieut. L. E. BROWNER, Whigham.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Camp Benning, Major C. M. O'CONNOR, Jr.; from Colonia, Lieut. G. Y. MASSENBURG, Macon.

To Sheffield, Ala., from Camp McClellan, Lieut. I. C. H. CARST, Carrollton.

Hawaii

To San Francisco, Calif., Letterman General Hospital, from Camp Dodge, Major E. W. BAYLEY, Fort Ruger.

Illinois

To Camp Custer, Mich., base hospital, from Camp Wheeler, Lieut. J. W. MILLER, Chicago; from Rockefeller Institute, Lieut. J. L. WEBB, Chicago.

To Camp Dodge, Iowa, to examine the command for cardiovascular diseases, from Camp Beauregard, Lieut. C. J. McMULLEN, Chicago.

To Camp Gordon, Ga., base hospital, from Camp McClellan, Capt. W. S. CONN, Naperville.

To Camp Grant, Ill., from Camp Lewis, Major W. DeBOER, Chicago. As tuberculosis examiner, from Camp Sheridan, Lieut. C. J. HYSLOP, Chicago.

To Camp Pike, Ark., base hospital, from Camp Logan, Lieut. G. H. ANDERSON, Chicago.

To Camp Zachary Taylor, Ky., as orthopedic surgeon, from Fort Sheridan, Capt. T. A. BRYAN, Mattoon.

To Chicago, Ill., from Camp Logan, Lieut. O. W. SIMPSON, Peoria; from Rockefeller Institute, Lieut. S. A. SMITH, Chillicothe.

To Fort Oglethorpe, from Camp Wadsworth, Capt. W. H. BUHLIG, Chicago.

To Fort Sheridan, Ill., from Camp Abraham Eustis, Capt. W. H. BURMEISTER, Chicago; from Camp Greene, Lieut. W. B. McCLURE, Evanston; from Camp Meade, Capt. F. P. HORAN, Evanston.

To Governor's Island, N. Y., from Camp Holabird, Lieut. C. C. MOE, Chicago.

To Philadelphia, Pa., from Camp Hancock, Lieut. E. H. SEIFERT, Chicago.

To report to the commanding general, Western Department, from Camp Lewis, Lieut. D. F. O'CONNOR, Chicago.

To Riverside, Calif., March Field, from Sacramento, Capt. W. E. MERCER, Liberty.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Camp Sherman, Capt. C. M. McKENNA, Chicago.

To Washington, D. C., Surgeon-General's Office, from Camp Grant, Lieut.-Col. H. C. MICHIE. Attending Surgeon's Office, from Camp Hancock, Capt. L. J. HUGHES, Elgin.

The following orders have been revoked: *To Army Medical School,* from Fort Oglethorpe, Lieut. J. V. ANDERSON, Chicago. *To Camp Meade, Md.,* base hospital, from Camp Grant, Major F. M. PHIFER, Chicago.

Indiana

To Camp Custer, Mich., base hospital, from Camp Lewis, Lieut. H. S. HIATT, Albion.

To Fort Benjamin Harrison, from Camp Wadsworth, Lieut. E. B. M. CASEY, Attica.

To Fort Des Moines, Iowa, from Camp Dix, Major H. O. BRUGGEMAN, Fort Wayne.

To Pig Point, Va., from Camp Wheeler, Capt. J. W. PAHMEIER, Indian Springs.

To Walter Reed General Hospital, D. C., from Camp Greene, Lieut. E. E. HEATH, Napoleon.

To Washington, D. C., from Camp Sherman, Capt. S. A. CLARK, South Bend.

To West Baden, Ind., from Camp Pike, Capt. L. ROGERS, French Lick; from Fort Riley, Lieut. C. E. BOYD, West Baden.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. C. R. GRAHAM, Bryant. To Fort Sheridan, Ill., from Camp Fremont, Major F. F. HUTCHINS, Indianapolis. *To Hot Springs, N. C.,* from Camp Zachary Taylor, Lieuts. E. O. DANIELS, Marion; C. G. MACKEY, Whiting.

Iowa

To Camp Dodge, Iowa, from Fort Riley, Major F. L. LOVE, Iowa City; Capt. R. H. GREGORY, Creston.

To Camp Pike, Ark., base hospital, from Camp Cody, Capt. F. H. LAMB, Davenport.

To Fort Benjamin Harrison, from Fort Leavenworth, Lieut. J. I. MARKER, Centerville.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Camp Shelby, Lieut. H. S. THOMAS, Oakdale.

To Fort Logan, Colo, to examine the command for nervous and mental diseases, from Fort Leavenworth, Capt. P. B. BATTEY, Independence.

To Philadelphia, Pa., from Camp Wheeler, Capt. J. L. SEABLOOM, Red Oak.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Dodge, Iowa,* base hospital, from Camp Dix, Lieut. T. F. E. BESS, Fort Madison.

Kansas

To Canal Zone, from Camp Custer, Lieut. B. WEATHERS, Osawatomie.

To Douglas, Ariz., from Camp McClellan, Lieut. H. L. GOSS, Horton.

To Fort Sheridan, Ill., from Camp Dix, Major C. C. NESSELRODE, Lenexo.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Camp Dodge, Lieut. S. J. SMOCK, Glasgow; from Camp MacArthur, Major C. G. LUCAS, Capt. J. K. FREEMAN, Louisville; from Camp Wheeler, Capt. L. H. KERR, Louisville.

Maine

To Camp McClellan, Ala., from Sheffield, Lieut. H. L. LOMBARD, Bridgton.

To report to the commanding general, Northeastern Department, from Camp Joseph E. Johnston, Major B. D. RIDLON, Portland.

Maryland

To Camp Meade, Md., base hospital, from Camp Dix, Lieut. E. G. DAVIS, Baltimore.

To Camp Pike, Ark., base hospital, from Camp Logan, Lieut. B. J. SANGER, Baltimore.

To Fort McHenry, Md., from Camp Dix, Capt. P. WROTH, Hagerstown.

To Fort Oglethorpe, from Camp Sevier, Capt. R. E. YELLOTT, Fallston.

To Philadelphia, Pa., from Fort McHenry, Major R. F. KIEFFER, Hagerstown.

To Walter Reed General Hospital, D. C., from Camp Upton, Lieut. A. M. EVANS, Baltimore.

The following orders have been revoked: *To Camp Sherman, Ohio,* Lieut. F. A. CAMALIER, Leonardtown. *To Hot Springs,* from Camp Zachary Taylor, Capt. T. R. PAYNE, Corbett.

Massachusetts

To Boston, Mass., from Camp Devens, Lieut. S. E. RYAN, Springfield; from Hoboken, Lieut. G. H. BINNEY, Jr., *Boston.*

To Camp Devens, Mass., base hospital, from Camp Greene, Lieut. R. B. HUNT, Arlington.

To Camp Dix, N. J., base hospital, from Camp Logan, Capt. R. B. OBER, Springfield.

To Camp Lee, Va., base hospital, from Camp Dix, Capt. A. A. FENTON, Norwood.

To Camp Meigs, D. C., to examine the command for nervous and mental diseases, from Camp Wadsworth, Capt. M. M. JORDAN, Westboro.

To Camp Zachary Taylor, Ky., as orthopedic surgeon, *from Army* Medical School, Lieut. H. E. POWERS, Boston.

To Eastview, N. Y., from Camp Greene, Capt. H. E. CARNEY, Boston.

To Fort Sheridan, Ill., from Fort McPherson, Major H. L. CONNER, Haverhill.

To Governors Island, N. Y., from Washington, Lieut. F. A. MURPHY, Taunton.

To Hoboken, N. J., from Camp Devens, Capt. L. J. MASKELL, Newton.

To Jefferson Barracks, Mo., to examine the command for nervous and mental diseases, from Fort Leavenworth, Capt. R. M. CHAMBERS, Westboro.

To New Haven, Conn., from Camp Devens, Lieut. A. G. C. SCHNACK, Boston.

To Williamsbridge, N. Y., from Camp Greene, Major F. W. PALFREY, Boston.

Michigan

To Camp Custer, Mich., base hospital, from Camp Greene, Capt. H. W. LONG, Escanaba.

To Detroit, Mich., Col. A. McLEAN Detroit; from Camp Dix, Lieut.-Col. B. R. SHURLY, Detroit; from Rochester, Lieut. D. H. McRAE, Mount Pleasant.

To Fort McPherson, Ga., from Camp Joseph E. Johnston, Lieut. A. W. ERKFITZ, Detroit.

To Philadelphia, Pa., from Camp Wheeler, Capt. F. P. BENDER, Caro.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Dix, Capt. J. G. R. MANWARING, Flint.

To Walter Reed General Hospital, D. C., from Surgeon-General's Office, Lieut.-Col. N. B. FOSTER, Ann Arbor.

Minnesota

To Biltmore, N. C., from Rochester, Major L. J. REGAN.

To Camp Devens, Mass., base hospital, from Camp Wheeler, Major G. D. HEAD, Minneapolis.

To Camp Jackson, S. C., base hospital, from Camp Upton, Capt. G. R. DUNN, Princeton.

To Fort Snelling, Minn., from Camp Dix, Capt. H. B. ZIMMERMANN, St. Paul.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Dodge, Capt. A. N. COLLINS, Duluth; from Pittsburgh, Lieut. G. A. MURRAY, Rochester.

To Williamsbridge, N. Y., from Rochester, Major W. P. DAVENPORT.

Mississippi

To report to the commanding general Southern Department, from Camp MacArthur, Major H. S LEWIS, Hattiesburg.

To Walter Reed General Hospital, D. C., from Camp Upton, Capt. H. JOHNSTON, Biloxi.

To Washington, D. C., Surgeon-General's Office from Camp Beauregard, Capt. M. C. HENRY, Bentonia.

Missouri

To Camp Jackson, S. C., base hospital, from Plattsburg Barracks, Major G. E. SCRUTCHFIELD, Marshall.

To Camp Meade, Md., base hospital, from Camp McClellan, Capt. F. M. DENSLOW, Kansas City.

To Camp Travis, Texas, from Camp Beauregard, Capt. D. E. SCHMALHORST, St. Louis.

To Camp Zachary Taylor, Ky., base hospital, from Camp Joseph E. Johnston, Lieut. C. C. KLEINSCHMIDT, St. Louis.

To Fort Des Moines, Iowa, from Camp Dix, Capts. F. R. TEACHENOR, H. S. VALENTINE, Kansas City.

To Fort Logan H. Roots, Ark., from Camp Pike, Lieut. E. D. EDWARDS, St. Louis.

To Jefferson Barracks, Mo., from Camp Dix, Lieut. J. L. HUTTON, St. Louis; from Fort Riley, Lieut. W. S. REILLY, St. Louis.

To Newport News, Va., from Biltmore, Capt. C. R. BUREN, Princeton; from Camp McClellan, Capt. J. L. ROBERTS, Kansas City.

To Pig Point, Va., from Camp Wheeler, Lieut. E. V. KRING, St. Louis.

Montana

To Fort Des Moines, Iowa, from Camp Meade, Capt. A. G. FULLER, Missoula.

To report to the commanding general, Southeastern Department, from Camp Joseph E. Johnston, Lieut. G. H. DAVIS, Bew.

Nebraska

To Camp Greene, N. C., base hospital, from Camp Jackson, Capt. C. H. NEWELL, Omaha.

To Fort Crook, Nebr., from Camp Meade, Lieut. E. O. WILSON, Madison.

To Fort D. A. Russell, Wyo., to examine the command for nervous and mental diseases, from Camp Dix, Capt. G. W. DISHONG, Omaha.

To Fort Des Moines, Iowa, from Camp Bowie, Lieut. C. W. WAY, Wahoo.

To Fort Leavenworth, Kan., from Fort Riley, Lieut. A. A. SMITH, Hastings.

To Fort Omaha, Neb., from Camp Dix, Capt. R. S. HART, Schuyler.

To Fort Porter, N. C., from Camp Greene, Capt. L. C. BLEICK, Omaha.

New Hampshire

To Boston, Mass., from Camp Dix, Major H. S. SMITH, Lancaster.

To Camp Devens, Mass., base hospital, from Camp McClellan, Capt. C. F. NUTTER, Nashua.

To Fort Des Moines, Iowa, from Fort Logan H. Roots, Major G. M. WATSON, Manchester.

To Hampton, Va., Langley Field, from Dallas, Major D. R. CHASE, Lebanon.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Army Medical School, Lieut. A. F. SARGENT, Pittsfield.

New Jersey

To Aberdeen, Md., from Camp Wheeler, Capt. E. GUION, Atlantic City.

To Camp Devens, Mass., base hospital, from Fort Riley, Major D. F. O'CONNOR, South Orange.

To Camp Gordon, Ga., as tuberculosis examiner, from Camp Logan, Lieut. C. ENGLANDER, Cedar Grove.

To Colonia, N. J., from Army Medical School, Capt. H. M. EWING, Montclair.

To Lakewood, N. J., from Camp McClellan, Lieut. J. J. BURNE, Newark.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Coloniai, N. J.*, from Plattsburg Barracks, Lieut. G. W. FINKE, Hackensack.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Cols. H. C. FISHER, W. H. MONCRIEF; from Newport News, Lieut. F. N. BUNNELL, Barnegat.

New York

To Biltmore, N. C., from Camp Hancock, Capt. S. B. THOMAS, Brooklyn.

To Camp Meade, Md., base hospital, from Edgewood, Lieut. I. S. STARTZ, New York.

To Camp Pike, Ark., base hospital, from Fort Logan H. Roots, Capt. C. H. SANFORD, New York.

To Camp Sherman, Ohio, as orthopedic surgeon, from Camp Pike, Lieut. F. N. POTTS, Buffalo.

To Camp Upton, N. Y., base hospital, from Camp Jackson, Major W. A. DOWNES, New York; from Camp McClellan, Capt. S. H. DE COSTE, Brooklyn.

To Colonia, N. J., from Camp A. A. Humphreys, Lieut. A. B. PEMSLER, New York; from Camp Dix, Capt. H. A. SMITH, Buffalo; Lieut. H. K. HARDY, Rushford; from Camp Upton, Major F. B. VAN WART, Brooklyn.

To Eastern Department, from Panama Canal Department, Capt. W. L. McFARLAND, New York.

To Fort McHenry, Md., from Camp Dix, Capt. H. B. HUVER,, Williamsville; from Camp Hancock, Lieut. P. J. WHITE, Jr., Staten Island.

To Fort Monroe, Va., from Camp Logan, Capt. M. M. LUCID, Cortland.

To Fort Ontario, N. Y., from Camp Grant, Lieut. M. E. STERN, New York.

To Fort Slocum, N. Y., to examine the command for nervous and mental diseases, from Plattsburg Barracks, Capt. C. L. CARLISLE, Albany.

To Fort Snelling, Minn., from Rockefeller Institute, Lieut. J. F. SMITH, Profile House.

To Hoboken, N. J., from Camp Abraham Eustis, Capt. G. W. SIMROLL, Brooklyn.

To Lakewood, N. J., from Camp Joseph E. Johnston, Capt. R. S. TAYLOR, Buffalo; from Madison Barracks, Lieut. A. R. SHIRLEY, New York.

To Otisville, N. Y., from Camp Hancock, Lieuts. W. B. EBELING, Brooklyn, E. GAMRIN, New York; from Camp Sheridan, Capt. H. M. SPOFFORD, Batavia.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Colonia, Lieut. T. L. McNAMARA, Corning. For instruction in the treatment of infected wounds, and on completion *to Eastview, N. Y.*, from Camp Wheeler, Lieut. G. F. SCUDDER, New York. On completion *to his proper station*, from Fort Snelling, Lieut. B. M. KULLY, New York.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major W. M. BRICKNER, New York.

The following orders have been revoked: *To Colonia, N. J.*, from Camp Dix, Capt. H. A. SMITH, Buffalo. *To Fort Oglethorpe* for instruction, Lieut. A. S. BLUMGARTEN, New York.

North Carolina

To Fort McPherson, Ga., from Camp Dix, Capt. W. M. SCRUGGS, Rutherfordton; from Camp Upton, Capt. B. N. JONES, Walnut Cove.

To San Francisco, Calif., from Camp Bragg, Lieut.-Col. D. W. McENERY.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. W. J. McANALLY, High Point.

Ohio

To Camp Dix, N. J., base hospital, from Camp Meade, Major R. H. BIRGE, Cleveland.

To Camp Sherman, Ohio, base hospital, from Camp Custer, Lieut. R. H. McKAY, Akron.

To Camp Zachary Taylor, Ky., base hospital, from Camp Shelby, Capt. C. MULKY, Warrensville.

To Columbus Barracks, Ohio, from Camp McArthur, Lieut.-Col. E. F. McCAMPBELL, Columbus; from Fort Riley, Lieut. E. C. NEHLS, South Charleston.

To Detroit, Mich., from Camp McClellan, Lieut. R. E. SINKEY, Toledo; from Camp Upton, Capt. M. A. WAGNER, Lima.

To Fort Benjamin Harrison, from Fort Oglethorpe, Lieut. H. H. WILLIAMS, Dayton.

To Fort McHenry, Md., from Camp Dix, Lieut. C. H. MOSES, Youngstown.

To Fort Sheridan, Ill., from Camp Dix, Capt. H. K. YAGGI, Salem; from Camp Sheridan, Capt. D. W. PHILO, Fremont; from Fort Oglethorpe, Lieut. W. M. LEONARD, Cleveland.

To Fort Snelling, Minn., from Camp Sherman, Lieut. J. B. DOYLE, Cincinnati.

To San Francisco, Calif., from Fort Riley, Lieut. H. W. WILLIAMSON, Toledo.

To Washington, D. C., Surgeon-General's Office, from Cape May, Major J. M. INGERSOLL, Cleveland.

Oklahoma

To Fort Des Moines, Iowa, from Fort Riley, Lieut. J. E. HEATLEY, Carmen.

To Fort Sheridan, Ill, from Camp Sheridan, Capt. O. HOVENDEN, El Reno.

To Wiliamsbridge, N. Y., from Camp Dix, Capt. G. D. McLEAN, Oklahoma City.

Oregon

To Camp Lewis, Wash., from Camp Meade, Lieut. G. S. NEWSOM, Prineville.

To Fort Sam Houston, Texas, base hospital, from Camp Kendrick, Capt. P. J. KEISER, North Bend.

To Riverside, Calif., March Field, from Vancouver Barracks, Capt. T. H MILLER, Eugene.

Pennsylvania

To Biltmore, N. C., from Camp Greene, Major C. P. BROWN, Glen Olden.

To Camp Abraham Eustis, Va., base hospital, from Camp Greene, Capt. G. G. KALMUTZ, Wilkes-Barre; from Camp McClellan, Lieut. F. B. BLOCK, Philadelphia.

To Camp Sherman, Ohio, base hospital, from Williamsbridge, Major J. R. V. WOLFE, Norristown.

To Camp Wadsworth, S. C, base hospistal, from Camp Sheridan, Lieut. J. H. GOLDSTEIN, Pittsburgh.

To Cape May, N. J., from Camp Dix, Major G. H. DORRANCE, Philadelphia.

To Fort McHenry, Md., from Camp Dix, Lieut. J. W. BRANSFIELD, Philadelphia.

To Hoboken, N. J., from Fort McPherson, Lieut. W. P. DODDS, Pittsburgh; from Northeastern Department, Lieut.-Col. J. F. EDWARDS, Pittsburgh.

To Lakewood, N. J., from Rockefeller Institute, Capt. E. A. CAMPBELL, Chester.

To Pittsburgh, Pa., from Camp Dix, Lieut. W. E. GARDNER, Pittsburgh; from Camp McClellan, Capt. H. S. FISH, Sayre.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Meade, Md.*, base hospistal, from Camp Hancock, Lieut. A. H. JAHN, Pittsburgh. On completion *to his proper station*, from Fort McHenry, Lieut. W. F. WHITE, Wellsboro.

To Washington, D. C., Surgeon-General's Office, from Camp Pike, Capt. R. V. ROBINSON, Pittsburgh.

The following order has been revoked: *To Washington, D. C.*, from Camp Dix, Capt. J. J. SINGER, Greensburg.

Rhode Island

To Army Medical School for instruction, from Camp Dix, Major M. S. DANFORTH, Providence.

To Philadelphia, Pa., from Camp McClellan, Lieut. E. W. MULLIGAN, Providence.

South Carolina

To Boston, Mass., from Camp Sevier, Lieut.-Col. C. E. FRONK.

To Camp Shelby, Miss., from Camp Wadsworth, Capt. T. J. PEAKE, Clinton.

To Newport News, Va., from Camp McClellan, Lieut. T. R. LITTLEJOHN, Sumter.

South Dakota

To Fort Des Moines, Iowa, from Camp Upton, Capt. L. Z. FLETCHER, Montrose.

Tennessee

To Fort McDowell, Calif., to examine the command for nervous and mental diseases, from Fort Leavenworth, Capt. J. P. SCHELL, Nashville.

To Fort McPherson, Ga., from Fort Leavenworth, Capt. G. A. HATCHER, Nashville.

To Fort Oglethorpe, from Camp Dix, Capt. C. P. EDWARDS, Kingsport.

To Newport News, Va., from Camp McClellan, Capt. M. G. BUCKNER, Nashville.

To Oteen, N. C., from Camp Hancock, Capt. J. O. WOODS, Newport.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Fort McHenry, Lieut. J. H. REVINGTON, Chattanooga.

Texas

To Camp Bowie, Texas, from Camp Dodge, Capt. D. C. WYLIE, Aspermont. Base hospital, from Fort Des Moines, Capt. W. C. DURINGER, Fort Worth.

To Camp Grant, Ill., base hospital, from Camp Dix, Lieut. C. B. YOUNG, Jr., Houston. *To examine the command* for nervous and mental diseases, from Camp Logan, Lieut. F. O. CALAWAY, Austin.

To Camp Lee, Va., base hospital, from Camp Logan, Lieut. R. W. DUNLAP, Palestine.

To Camp Logan, Texas, to examine the command for nervous and mental diseases, from Camp Gordon, Lieut. C. W. CASTNER, Terrell.

To Camp Travis, Texas, base hospital, from Camp Lewis, Major I. L. McGLASSON, Waco.

To Fort McHenry, Md., from Camp Logan, Capt. H. L. WARWICK, Fort Worth.

To Fort McPherson, Ga., from Camp Dix, Lieut. W. M. DICKENS, Greenville.

To Fort Sam Houston, Texas, from Camp Dodge, Major C. H. BYARS, Brownsville. Base hospital, from Camp Hancock, Lieut. W. L. ASKEW, Amarillo; from Camp Wheeler, Lieut. J. V. HOPKINS, Victoria.

To Houston, Texas, Ellington Field, from Camp John Wise, Major J. DIBBLE.

To Middletown, Pa., from Camp Dix, Capt. O. P. GOODWIN, Lamasco.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. W. H. SMITH, Hondo. *To Camp Kelly*, Texas, Lieut. R. P. GLENN, Abilene.

Vermont

To Camp Sheridan, Ala., base hospital, from Camp Dix, Lieut. J. D. THOMAS, Pownal.

To Camp Zachary Taylor, Ky., base hospital, from Camp McClellan, Capt. R. B. THOMAS, Enosburg Falls.

To Hoboken, N. J., from Mays Landing, Lieut. H. L. TILLOTSON, Groton.

To Plattsburg Barracks, N. Y., from Camp Jackson, Capt. A. D. FINLAYSON, Burlington.

Virginia

To Camp Abraham Eustis, Va., from Camp Lee, Major G. C. BEACH, Jr.

To Camp Lee, Va., base hospital, from Camp Dix, Major R. P. BELL, Staunton.

To Camp Meade, Md., base hospital, from Camp Wadsworth, Lieut. W. H. CRAIG, Richmond.

To Fort McHenry, Md., from Camp Dix, Capt. M. C. LILE, University.

To New Haven, Conn., from Camp Abraham Eustis, Major A. FREER.

To Philadelphia, Pa., from Camp Sevier, Lieut. B. E. STRODE, Amherst.

To report to the commanding general, Southern Department, from Camp Logan, Lieut. A. H. DEEKENS, Lynchburg.

Washington

To Alcatraz, Calif., from Fort Leavenworth, Major A. P. CALHOUN, Seattle.

To Americus, Ga., Souther Field, from Vancouver Barracks, Lieut. H. T. DOUST.

To Army Medical School for instruction, from Camp Dix, Major C. F. EIKENBARY, Spokane.

To Camp John Wise, Texas, from Vancouver Barracks, Major A. H. LEHMAN.

To Camp Lewis, Wash., from San Francisco, Major W. N. KELLER, Tacoma.

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Lieut. W. C. KINTNER, Seattle.

To Dallas, Texas, Love Field, from Vancouver Barracks, Lieuts. H. M. ANDREW, S. G. ODOM.

West Virginia

To Jefferson Barracks, Mo., from Camp Abraham Eustis, Lieut. F. W. WIEHE, Wheeling.

To Walter Reed General Hospital, D. C., from Camp Dix, Capt. C. S. COWIE, Martinsburg.

To Washington, D. C., Surgeon-General's Office, from Kingsport, Lieut. S. W. BULL, Spencer.

Wisconsin

To Camp Sheridan, Ala., base hospsital, from Camp MacArthur, Capt. O. A. NELSON, Park Falls.

To Camp Upton, N. Y., base hospital, from Fort Porter, Capt. S. G. PAKE, Haywood

To Chicago, Ill, from Camp McClellan, Lieut. D. H. WITTIE, Hartford.

To Denver, Colo., from Camp A. A. Humphreys, Capt. L. H. FLANCHER, Lomira.

To Fort Des Moines, Iowa, from Camp MacArthur, Capt. F. W. APLIN, Waukesha.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major R. H. IVY, Milwaukee.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

State Medical Society Meeting.—The Medical Society of the State of California will hold its annual meeting at Santa Barbara, April 15-17.

Expenditures for Influenza.—Dr. William C. Hassler, city health officer of San Francisco, reported to the supervisors' finance committee that $35,292 had been expended of the $50,000 provided for the relief of needy sufferers during the influenza pandemic.

Conviction Sustained.—The district court of appeals, February 18, confirmed the conviction of Dr. William S. Card, San Francisco, on the second degree murder charge coming out of an alleged illegal operation performed May 21, 1918. Dr. Card was convicted in the superior court, July 9, 1918, and sentenced to imprisonment for an indeterminate term.

Personal.—Dr. Morris Herzstein, San Francisco, sailed for Europe, March 8, on the steamer *George Washington*, to make a study of a number of new surgical problems in the hospitals in London and Paris.——Dr. William C. Hassler, city health officer of San Francisco, has been appointed superintendent of the San Francisco Hospital during the absence of Dr. Richard G. Brodrick, who has been granted leave of absence to supervise the construction and equipment of the new $2,000,000 hospital for Alameda County.——Dr. T. d'Arcy M. Quinn has been appointed city physician of San Francisco.

ILLINOIS

Encephalitis Lethargica.—This disease has now been made notifiable by the Chicago health department and also by the state department of health. One death has occurred at Marseilles, and one in the Children's Memorial Hospital in Chicago.

Smallpox at Salem.—Smallpox is reported to have broken out at Salem, Marion County, the infection being conveyed by the principal of the school, who did not know that he had smallpox. Dr. J. A. Keppleman of the state department of health, Springfield, has been sent to Salem to take charge of the situation.

Personal.—John Wesley Tope, Capt., M. C., U. S. Army, Oak Park, who went overseas with the Thirteenth Engineers, returned to the United States, March 5.——Robert Nelson Lane, Capt., M. C., U. S. Army, Gibson City, returned from overseas, March 5.——Dr. Charles H. Franz, Aurora, after thirty years of practice in Illinois, during which time he was at one time assistant superintendent of the Elgin State Hospital and president of the Fox River Medical Society, has moved to San Francisco, where he is assistant surgeon in the United States Public Health Service.

Influenza Survey.—The department of public health of Illinois during February conducted a house to house canvass of the influenza situation in selected localities in Illinois, principally in cities whose populations were composed chiefly of miners and their families. The investigation disclosed that the disease was more prevalent among children than adults, contrary to the general impression, and that the duration of the disease among the children was from three to five days, as against from seven to eight days among adults. The mortality among the children was also found to be small, while in adults it was much larger. In some communities from 70 to 75 per cent. of the population had had the disease.

Speedway Hospital.—The final plans for taking over by the United States Public Health Service of the Speedway Hospital have been perfected, and it is expected that the institution will be ready for occupancy by July 1. The revised plans include the changing of the large wards into smaller separate units, and this will involve an additional expense of about $500,000. The scope of the project is much larger than that of a hospital. It is to be a national medical center where the various activities of the United States Public Health Service will unite, and from which the future work of the service of sanitation and hygiene will be carried on. The hospital will contain more than 1,500 beds, and there will also be lecture halls, an extensive museum of hygiene, and sufficient space to admit the segregation of diseases and to afford place for special study.

Chicago

Improvements at the Marine Hospital.—The improvements at the United States Marine Hospital, for which an appropriation of $110,000 was recently made, include a residence for the surgeon to cost $10,000; officers' quarters to cost $20,000, and quarters for attendants and nurses to cost $80,000.

Personal.—James J. McGuinn has returned after six months' work with the American Red Cross in France and Germany. ——Maurice L. Goodkind, Major, M. C., U. S. Army, who is on duty in France with the Fifty-Third Hospital Unit, has been promoted to the rank of lieutenant-colonel.——Eugene Cary, Capt., M. C., U. S. Army, who has been on duty with the Royal Air Forces, has returned to this country.——John Edward Kelley, Capt., M. C., U. S. Army, who has been on duty in France, has returned to Chicago.——Gustavus M. Blech, Major, M. C., U. S. Army, who went overseas as assistant division surgeon of the 33d Division, has been promoted to lieutenant-colonel, M. C., U. S. Army, and is in command of U. S. Army Base Hospital No. 208, which is located near Bordeaux. The hospital has accommodation for 4,000 patients, covers 65 acres of ground, and contains more than 100 barracks and an administration building.——Frederick A. Besley, Lieut.-Col., M. C., U. S. Army, has returned from California.

IOWA

Emergency Hospitals Closed.—The Red Cross emergency hospitals at Storm Lake and Marshalltown, which were opened during the influenza pandemic, have been closed.

New Laboratory for Sanatorium.—A bill calling for an appropriation of $25,000 for a laboratory for the Oakdale Sanatorium near Iowa City has been passed by the state senate. The new building will be a two story, fire-proof structure.

New Officers.—At the annual meeting of the Muscatine County Medical Society held in Muscatine, February 27, the following officers were elected: president, Dr. D. Powers Johnson; vice president, Dr. William H. Johnston, and secretary-treasurer, Dr. William W. Potter, all of Muscatine.

Children's Hospital Ready.—The Hospital for Crippled Children connected with the University of Iowa, Iowa City, is now ready to receive patients and will soon be formally dedicated. At present there are eighty-five patients waiting in the Perkins Ward of the University Hospital. The new hospital will accommodate more than 100 patients.

Personal.—Dr. David E. Beardsley has been appointed associate district surgeon of the Chicago and Northwestern System, at Cedar Rapids.——Daniel J. McCarthy, Major, M. C., U. S. Army, Davenport, a member of the American Red Cross Commission in Serbia, has been given the highest decoration of the Serbian government for his work among soldiers and refugees.——Edwin C. Yoder, Lieut. M. C., U. S. Army, Iowa City who has been on duty with the Medical Corps in France, has returned home.——Dr. John H. Peck, Des Moines, was elected president, and Drs. Herbert R. Sugg, Clinton, Gilford H. Sumner, Des Moines, and William H. Bickley, Waterloo, were elected directors of the Iowa Tuberculosis Association, at the annual meeting held in Des Moines, February 18.——Dr. Emil O. Ficke, Capt., M. C., U. S. Army, Davenport, on duty with the 90th Division, American Expeditionary Forces in France, has returned and resumed practice.——Dr. Walter A. Sternberg, Mount Pleasant, was seriously injured in a collision between automobiles, February 4.

Hospital Authorities Defended.—Judge Charles W. Mullan of the District Court of Iowa recently decided a question of interest to physicians relative to the power of the boards of health to require privately owned general hospitals to accept patients suffering from contagious diseases, which had reached the stage of epidemic in the city of Waterloo. The particular epidemic in question was influenzal pneumonia. The health authorities of Waterloo, acting under the statute which gives municipalities the power of protecting the general welfare of communities by the passage of suitable ordinances and resolutions, passed a resolution declaring the existence of public peril, and sought enforcement of the resolution by tendering to the hospital patients suffering from the disease, and on the refusal of the hospital to receive these patients, brought action for the affirmative equitable relief of enforcement. The hospital authorities challenged the power of the board of health, and challenged its acts further on the grounds that in the enforcement it amounted to taking private property without compensation, and furthermore that the regulation was unreasonable. The court decided the case without reference to the reasonableness, but found under the law that the board of health was without any power such as it proposed to exercise. The result was unconstitutional because it amounted to the taking of private property without compensaton, and held that in any event no decree in such a case could be enforced because of the fact that it required personal services of nurses and attendants which would render the court powerless to execute its decree if rendered.

MARYLAND

Gift to Blinded Soldiers.—Soldiers blinded in war, who are receiving vocational training at United States Hospital No. 7, Evergreen Junior, have received a gift of nearly $3,000 from the Baltimore committee of the Woman's Homeopathic Base Hospital Unit.

Personal.—Dr. Elizabeth Hurdon, Baltimore, who was on the medical staff of the British army behind the lines at Saloniki, and Dr. J. Preston Maxwell, engaged in medical work in China during the various plagues for the last twenty years, both members of the staff of the Johns Hopkins University, gave interesting accounts of their experiences, March 7, at Osler Hall before the Baltimore City Medical Society. ——Dr. William S. Thayer, Baltimore, who returned recently to this country after serving with the United States Medical Corps with the rank of brigadier-general, gave a graphic account of his sojourn in Russia during the revolution of 1917, to the students and nurses of Johns Hopkins Hospital, March 8.

Plans for Health Center.—Plans for the establishment of a health center in northwest Baltimore in connection with the new bureau of child hygiene and infant mortality were discussed at a special meeting of the board of estimates held during the past week. The city health department was allowed a physician at $1,800 a year, with the understanding that he would devote all of his time to the work. The department was also allowed three obstetric nurses at $1,100 a year each, three social service nurses at the same pay, a dispensary clerk at $900, a service woman for a day nursery at $500, and $10,800 for equipment. The board also approved a recommendation from Dr. Mary Sherwood, head of the bureau, that $8,000 be set aside for the employment of eight nurses for child welfare work where most needed, especially in the prevention of summer complaint and pneumonia, and that $2,500 be set aside for the immediate development and running expenses of a day nursery for babies in the general neighborhood of existing city health agencies.

MASSACHUSETTS

Personal.—Harvey Cushing, Col., M. C., U. S. Army, Brookline, director of Base Hospital Unit No. 5, the second Harvard Medical Unit to go overseas, reached New York, February 19, on the U. S. S. *Canopic* from Brest after twenty-one months' service abroad.

Unregistered Practitioner Fined.—Mrs. Minnie Buchsegger, Attleboro, a chiropractor, charged with practicing medicine without registration, is said to have waived exemption in the district court, February 19, and to have been fined $600. She appealed from this decision and was held in bond of $1,000.

MINNESOTA

Influenza.—Deaths in Minnesota during 1918 numbered 31,133, as compared with 23,615 in 1917. Influenza was responsible for 7,260 deaths in 1918. More than 125,000 influenza cases were reported.

Certificates in Public Health Nursing.—The first class of thirteen nurses in the course in public health nursing under the direction of the Minnesota Public Health Association and the University of Minnesota received their certificates at the end of the four months' course, February 13. The course is for the benefit of graduate nurses from accredited training schools and senior nurses in training. The second class began its instruction, March 5.

Personal.—S. Marx White, Major, M. C., U. S. Army, Minneapolis, chief of the medical service in Base Hospital No. 26, spoke at the noonday meeting of the Hennepin County Medical Society, February 26, on "Some Medical Lessons from the War."——Dr. Walter L. Mattick of Deerwood Sanatorium held a free tuberculosis clinic at Aitkin, February 15. ——In the suit brought against Dr. Daniel C. Darrow, Moorhead, by Mrs. P. H. Sorenson, for assault while under medical treatment, in which $20,000 damages were sought, the jury is said to have returned a verdict giving the plaintiff $3,000.—— Warren A. Dennis, Lieut.-Col., M. C., U. S. Army, St. Paul, who was on duty with Base Hospital No. 88, at Langres and Sovenay, France, for five months, returned on the U. S. S. *Rotterdam,* which arrived in New York, February 17.

NEW YORK

Watertown to Have Full-Time Health Officer.—Watertown has appropriated $3,000 for the services of a full-time health officer and $600 for a part-time public health nurse.

Society Opposes Health Insurance.—The Albany County Medical Society, March 4, after a four hours' debate at a special meeting, went on record as opposing any bill embodying the scheme of compulsory health insurance.

Health Department Reunion.—The twelfth annual reunion of the Health Department of Buffalo was held, February 25, and was attended by more than 200 members of the department, former members, and their friends. Dr. Edward Durney was chairman of the occasion.

Chiropractor Convicted.—George N. Devinny, a chiropractor of Albany, is said to have been found guilty of violating the public health law by practicing medicine without a license, and to have been sentenced, March 2, to imprisonment for ten days and to pay a fine of $500. Devinny stated that he had been convicted in 1915 on a similar charge.

New York City

Harvey Society Lecture.—The sixth lecture of the Harvey Society series will be given by Dr. Yandell Henderson at the New York Academy of Medicine, March 29, at 8:30 p. m., on "Physiology of the Aviator."

Another Medical College Admits Women.—New York University and Bellevue Hospital Medical College will admit women on the same basis as men and with full privileges of the college, in September, and will grant them the degree of Doctor of Medicine on graduation. Medical degrees have just been conferred on seventy-seven students who finished their courses three months earlier than usual, owing to the war emergency program adopted last year.

Appeal for Funds to Continue Treatment of Children.—The New York Committee on After-Care of Infantile Paralysis, whose headquarters are at 289 Fourth Avenue, is making an appeal for $75,000, so that the treatment of children who have not yet recovered may be continued. A summary of the work done by the committee shows that 8,720 children have been cared for and 2,913 braces furnished. The entire receipts have been $280,852, of which $278,321 has been disbursed.

Report on Drug Addicts.—James A. Hamilton, commissioner on correction, in his annual report on drug addicts, shows that 240 men and thirty-two women were committed by the courts during the past year as drug users. Of these, 114 men and sixteen women had never been convicted of crime. Commissioner Hamilton recommends that all drug cases should be committed to a correctional institution instead of to hospitals for treatment, because it is too easy for the addict to get out of a hospital.

Personal.—Dr. Samuel W. Lambert, dean of the College of Physicians and Surgeons in the City of New York for fifteen years, and professor of clinical medicine, has resigned from the faculty of that institution, to take effect on June 30.—— Dr. Frederic Huntington Coerr has returned from foreign service and will resume his practice.——Herbert L. Celler, Major, M. C., U. S. Army, recently arrived in this country after service with the Mount Sinai Hospital Unit in France. ——Harold Neuhof, Lieut., M. C., U. S. Army, who has been overseas since May, 1917, has returned to civil life.——David Lothringer, Capt., M. C., U. S. Army, who has been in the service with the American Expeditionary Forces as surgeon of the Seventh Trench Motor Battalion, has been mustered out of the service.

Annual Report of Mount Sinai Hospital.—The annual meeting of the Society of Mount Sinai Hospital was held, March 3, at which time addresses were made by Col. Howard Lilienthal and Major Edwin Beer, who have recently returned from Base Hospital No. 3, the Mount Sinai Unit, which served in France. It is the intention of the authorities to resume at the earliest possible moment the building program outlined before the war and it is hoped that actual work will be begun in the spring of 1920 and that the new hospital buildings will be completed by the end of the following year. The expenses of the hospital for the year were $652,835, which were covered by receipts of a similar amount, $213,388 of which was contributed by the federation for the support of Jewish philanthropies. Base Hospital No. 3 had a very active service abroad, having cared for as many as 2,800 patients at one time. It was announced that the experimental stage of the cardiac clinic had been passed and it had been regularly incorporated as a part of the dispensary, and has been installed in quarters especially designed for it in the children's clinic.

PENNSYLVANIA

New Hospital.—A modern two story brick structure to cost more than $60,000 is to replace the Williamsport Private Hospital, destroyed by fire more than a year ago. An option on the adjoining residence has been secured, and the building will be used as a home for nurses.

Personal.—Dr. Howard L. Hull, Camp Hill, formerly associate chief medical inspector, has been appointed chief medical inspector of the state department of health, succeeding Dr. B. Franklin Royer, Harrisburg.——Dr. John L. Laird, Philadelphia, formerly chief of the genito-urinary dispensaries of the state board of health, has been appointed chief of the laboratory of the state board of health to succeed Dr. James B. Rucker, Jr., Philadelphia.——Dr. B. Franklin Royer, formerly assistant health commissioner of Pennsylvania, and after the death of Dr. Dixon, acting health commissioner of the state, was given the honorary degree of Doctor of Science by Ursinus College, February 20.

Philadelphia

Personal.—Dr. Alexander Sterling has been appointed assistant physician pro tem. in the department of medicine in the service of Dr. S. Solis Cohen, at the Jewish Hospital.—— Dr. S. Leon Gans has been appointed chief of the genitourinary dispensares of the state to succeed Dr. John L. Laird, resigned.——Dr. S. McClintock Hamill will be one of the three delegates from this country to the international conference on public health and child welfare at Cannes, France, the first week in April. The invitation was extended by Dr. Livingston Farrand, Boulder, of the American Red Cross.—— Dr. Dorothy Child has been appointed chief of the division of child welfare in the state department of health, succeeding Dr. Hamill, resigned. Dr. Child recently returned from France, where she was engaged in Red Cross work.——Drs. George F. Souwers, Charlotte S. Farrington, Frederick Van Gunten, Benjamin Brown and Walter M. Miller have been named assistant medical inspectors by the director of public health and charities.

WEST VIRGINIA

Public Health Council.—The West Virginia Public Health Council, presided over by Dr. Vincent T. Churchman, Charleston, announces that it will hold its next examination for licensure, July 15 to 17, at the Hotel Huntington.

Health Officers' Conference.—The next conference of health officers of West Virginia will be held at the Hotel Chancellor, Parkersburg, April 23, under the chairmanship of Dr. Samuel L. Jepson, state health commissioner and secretary of the state public health council.

CANADA

New Medical Bill Not Considered.—As no mention of the new medical bill was made in the lieutenant-governor's address before the Ontario legislature, it is feared it will not be dealt with this season, and if introduced at all, will most probably be withdrawn.

New Military Hospital Opened.—The new orthopedic headquarters for Canada Military Hospital was formally opened in Toronto, March 1. Lieut.-Col. Charles S. McVicar is the officer commanding. The institution has a capacity of 1,000 patients; eventually the orthopedic hospital at Davisville, North Toronto, will be evacuated, and the remaining patients sent down to the Christie Street Hospital.

Ontario Medical Association.—The thirty-ninth annual meeting of the Ontario Medical Association will be held in Toronto, May 28 to 30, under the presidency of Dr. G. Stewart Cameron, Peterboro. The following are the chairmen of sections: Dr. Edmund E. King, surgery; Dr. John Sheahan, St. Catharines, medicine; Dr. Benjamin P. Watson, obstetrics and gynecology, and Dr. Frank C. Trebilcock, Toronto, ophthalmology, otology, rhinology and laryngology.

Banquet to New Dean.—February 5, a banquet was given at the Ritz-Carlton, Montreal, in honor of Dr. Louis de Lotbinière Harwood, the new dean of the Faculty of Medicine of Laval University, Montreal. About 200 were present, of whom 150 were medical men, and Dr. Rodolphe Boulet, Montreal, president of the College of Physicians and Surgeons of the Province of Quebec, presided. The toast to the guest of honor was proposed by Prof. A. Achille Foucher.

Personal.—Dr. Antoin H. Desloges, Montreal, has been nominated as general medical superintendent of the hospitals for the insane of the Province of Quebec.——Capt. Rene E. A. Weston, Tillsonburg, Ont., who was with the Second Canadian Field Ambulance in France, was signally mentioned in the last dispatches of Marshal Haig.——Major Brefney R. O'Reilly, Toronto, chief medical officer in Canada of the Royal Air Force, has sailed for England.——Dr. Edward A. Lebel, Lieutenant-Colonel in the C. A. M. C., Quebec, who commanded the Canadian hospital at St. Cloud, France, was stricken with paralysis in the latter part of January.——Lieut.-Col. Percy G. Brown, M.B., Toronto, is now an officer of the Order of the British Empire.——Major John F. Burgess, M.B., Owen Sound, Ont., has become a member of the Order of the British Empire. He was wounded in October.——Dr. William H. Jeffs, Toronto, has received word that his son, Dr. Howard B. Jeffs, has been made chief medical officer in charge of the disembarkation of Canadian troops at Portland, Maine.——Dr. Charles E. Treble has been appointed roentgenologist to the Wellesley Hospital, Toronto.——Major C. Edward Cooper Cole, Toronto, has been appointed to the command of the military hospital at Witley, England.——Cols. Herbert A. Bruce and James A. Roberts, Toronto, have arrived home from overseas.

GENERAL

Influenza Squad Commended.—The Secretary of the Navy announced, March 4, that he had officially commended fifty-two enlisted men of the Navy who, during the recent influenza pandemic, voluntarily submitted to experiments at the Naval Hospital, Chelsea, Mass., to aid the surgeons to attempt to secure the cause and method of transmission of the disease and to secure a preventive.

Rockefeller Money for Medical Education.—At a meeting of the General Education Board of the Rockefeller Foundation, appropriations aggregating $1,108,525 were made to various educational institutions throughout the United States. Of this sum the largest amounts were given for medical education, $400,000 being given to Johns Hopkins University Medical School for the endowment of a department of obstetrics, and $150,000 to the Meharry Medical College at Nashville, Tenn.

Warning.—A warning has been issued by some of the medical book publishers regarding M. J. Maddox formerly of Boise, Idaho, who is soliciting orders for books from hospitals, sanatoriums and nurses. Maddox makes it a practice to collect money in advance, and then disappears without giving his customers anything for their money except a pleasant smile. Our readers should be on the lookout for this man and should beware of paying money to any agent with whom they are not personally acquainted.

Posture League Meeting.—The American Posture League held its annual meeting, March 8. After luncheon an address was made on posture in industry, by Mr. Harry Arthur Hoff, consulting engineer, after which clinical demonstration of methods of recognizing and recording posture were given by Dr. Stella S. Bradford of the Adams' Place, Pompton Lakes, N. J., and Miss Jessie H. Bancroft. Moving pictures and other lantern slides on posture were shown and addresses made on the anatomic demonstration of some of the articles resulting from the technical committees of the league, including the chairs.

Dinner for Dr. Purnell.—A dinner in honor of Dr. Caroline M. Purnell, Philadelphia, was given, Saturday evening, March 8, at the Hotel McAlpin, New York, by the American Women's Hospitals, whose commissioner in France she has been for the past five months. The American Women's Hospitals, besides its own hospitals at Luzancy, Seine-et-Marne and La Ferte-Milon, Arrondissement de Chateau-Thierry, Aisne, France, staffed entirely by physicians and dentists from its own membership, has had almost 100 of its members working under the American Red Cross in France, Italy, Serbia and Palestine, and is now supplying physicians for the American Committee for Relief in the near East. Six of their members have recently sailed to take charge of hospitals in Turkey and Asia Minor.

Organization of Red Cross for Peace.—At the February 15 meeting of the American Red Cross in Washington, reorganization was effected for carrying on the work of the organization on a peace basis. The War Council of the Red Cross retired, March 1, and its functions have been transferred to the Central Committee, though four of the members of the War Council remain as members of the executive committee. They are Henry P. Davison, New York; Eliot Wadsworth, Boston; Cornelius N. Bliss, Jr., New York, and George E. Scott, Chicago. Dr. Livingston Farrand, Boulder, formerly president of the University of Colorado, has succeeded ex-President Taft as chairman of the Central Committee. National officers were elected as follows: president, Woodrow Wilson; vice presidents, William H. Taft and Robert W. DeForest; treasurer, John Skelton Williams; counselor, Alexander King, and secretary, Stockton Axson.

Delegation to Rehabilitation Conference Arrives.—A delegation of prominent surgeons and educators from France, Belgium and Italy arrived in New York, March 6, to attend the international conference to be held from March 18 to 22 under the auspices of the Red Cross Institute for Crippled and Disabled Men. The delegates from the Belgian government are: Prof. Louis Alleman of the government institution for cripples at Port Villez, France, and Prof. Edmund Bronsart, director of the school of reeducation for French crippled soldiers at Montpelier, France. The delegates of the French government are: Dr. Morris Bourrilon, president of the Permanent Interallied Committee on War Cripples and director of the French National Institute for Crippled Soldiers, and Dr. Andre Treves. Professor Vittorio will represent Italy. The delegation coming from Canada will be led by Sir James Lougheed, and that from Great Britain will be headed by Major Robert Mitchell.

The Hospital Bill.—The conference report on House Bill 13026, providing hospital facilities for sick and disabled soldiers, sailors and others, has been agreed to in Congress and is now a law. Under it the Secretary of the Treasury (through the United States Public Health Service) is authorized to provide immediate additional hospital and sanatorium facilities for the care and treatment of discharged sick and disabled soldiers, sailors and marines, Army and Navy nurses (male and female), patients of the War Risk Insurance Bureau, merchant marine seamen, seamen on boats of the Mississippi River Commission, officers and enlisted men of the United States Coast Guard, officers and employees of the Public Health Service, certain keepers and assistant keepers of the United States Lighthouse Service, seamen of the Engineer Corps of the United States Army, officers and enlisted men of the United States Coast and Geodetic Survey, civilian employees entitled to treatment under the United States employees' compensation act, and employees on Army transports not officers or enlisted men of the Army now entitled by law to treatment by the Public Health Service. Under this law, the following properties are turned over for the purposes named: hospitals and sanatoriums at Camp Cody, N. M., Camp Hancock, Ga., Camp Joseph E. Johnston, Fla., Camp Beauregard, La., Camp Logan, Texas, and Camp Fremont, Calif.; the nitrate plant, Perryville, Md., and such other hospitals and dispensaries hereafter vacated by the War Department as may be required and found suitable for the needs of the Public Health Service. Among the other hospitals and sanatoriums mentioned are the Battle Mountain Sanatorium at Hot Springs, S. D., General Hospital 15 at Corpus Christi, Texas, the "Speedway" hospital at Chicago, a site for a sanatorium at Dawson Springs, Ky. (to be built), a hospital to be built at Norfolk, Va., one at Washington,

D. C., and others. The Secretary of War is authorized to turn over to the Public Health Service under this act hospital equipment and supplies, motor trucks and cars, etc., for the use of the hospitals and sanatoriums. For the purpose of carrying out the provisions of the act, the sum of about $9,000,000 is appropriated.

FOREIGN

Hookworm in Jamaica.—Dr. Powell Gardner of the Rockefeller Institute, New York, has arrived at Kingston, Jamaica, to engage in a campaign against hookworm disease begun by the local government.

The Kitasato Institute for Infectious Diseases.—The seventh graduation exercises of the Kitasato Institute at Tokyo, Japan, were held recently, thirty-nine graduates being given diplomas by the minister of the interior.

Ambulance Aeroplane Tested.—A 1,000 horse power aeroplane was tested in Paris, March 3, to determine its applicability as an ambulance. During the test, surgeons, hospital equipment and wounded were conveyed.

More Food for Poles.—The American Red Cross, March 6, dispatched from Switzerland a third special train of twenty-one cars loaded with provisions for the Polish people. The train was accompanied by a Swiss military escort.

The Ace Among the Army Surgeons of Italy.—The *Policlinico* states that Dr. C. Rizzo now has the record for military decorations, nine having been conferred on him, including five for deeds requiring exceptional courage.

Health Pad Calendar.—The Italian Red Cross has issued a pad calendar with maxims for individual and communal hygiene on each of the leaves, to be torn off day by day. This *Calendario della Salute* is sold for $1. The Rome headquarters are at the Libreria Mantagazza, via Nazionale 145.

Red Cross on Way to Poland.—The first contingent of the American Red Cross Commission to Poland, left Paris for Warsaw, February 21 and arrived in Warsaw, March 6. It was joined by another group at Berne. The commission is under the command of Walter C. Bailey, Lieut.-Col., M. C., U. S. Army, Boston, and consists of fifty members from all parts of the United States.

Endowed Chairs at the University of Glasgow.—It is reported that the University of Glasgow has received from Mr. William Guthrie Gardiner and Mr. F. C. Gardiner an endowment for three chairs in the university, these being the chairs of bacteriology, organic chemistry and physiologic chemistry. The endowment amounts to £20,000, or $100,000, for each chair, making a total of £60,000, or $300,000.

Red Cross Hospitals in Serbia.—The American Red Cross has already established a hospital at Uskub, under charge of Dr. Daniel J. McCarthy, Davenport, Iowa, and at Monastir under the charge of Dr. Regina F. Keyes, Buffalo. Other hospitals will be established in northern Serbia as they may be required. There are also physicians and dentists of the Red Cross at Nish, Belgrade and other points. In the Monastir district there is a special Red Cross commission to train Serbian peasants in American farming and methods, and to demonstrate to them the benefit of American agricultural machinery.

Influenza in Japan.—According to articles in the *Japan Medical World* there was an epidemic of influenza in various parts of Japan during the spring of 1918, although this fact was not published at the time. In October it assumed a pandemic character, and Kanai remarks that it may not be much exaggerated to say that nearly the entire populace was infected. The total number of cases among the soldiers was 25,915, of which 121 terminated fatally. Among the troops in Formosa, China and elsewhere, there were 4,218 cases with only nine deaths. The bacteriologic findings seem to be about the same as those reported elsewhere.

Deaths in the Profession Abroad.—**Dr. L. M. Bossi**, professor of obstetrics at the University of Milan, was assassinated there, January 31, by an oriental. He is known for his instrumental metal dilator for the uterus, and his contention that gynecologic disease is the basis for certain cases of mental impairment.——**Dr. R. Massalongo**, lecturer on medical pathology and neuropathology at the universities of Turin and Padua, chief of the public hospital at Verona, and author of numerous works on familial nervous diseases, on pituitary dystrophy, epilepsy and brain diseases in children, member of various medical societies in Italy and elsewhere and on the board of the Italian Internal Medicine Society.——**Dr. C. W. Sebardt** of Stockholm, who has always taken a leading part in the organization of pharmacists in Sweden and in raising the standard of pharmacies, public health and public welfare in general, aged 77. He was a member of the Swedish Medical Association for fifty-five years and was the delegate from Sweden to various international congresses of pharmacy.

BUENOS AIRES LETTER

Buenos Aires, Jan. 27, 1919.

Epidemic of Influenza

When the recent epidemic began to die away even in the more remote parts of the country, the people were alarmed by the appearance of a new focus at the port. The steamer *Demerara* brought some sick people from Santos, and their arrival spread the sickness again on the ship and at the Hotel de Immigrantes. Measures were taken to isolate the cases and the illness was checked. The severe epidemic which broke out in Paraguay and which extended to Misiones had completely declined by the first fortnight in January.

Bubonic Plague in Salta and Jujuy

The distant province of Jujuy situated in the extreme north of the country has been again attacked by the plague. When these small foci were observed, they were quickly isolated, but shortly afterward others appeared among the small towns of the neighboring province of Salta, especially in Rosario de Lerma, Carmen and Chicuana. According to the latest news cases have been observed at the gates of the city of Salta.

The Departamento Nacional de Higiene has sent a medical commission to Jujuy, directed by Dr. de la Sota, who has already returned. At this date another commission directed by Dr. Vaca has been sent to the province of Salta.

Diagnosis of Syphilis from Semen

In a preliminary note, Drs. Widakovich and Sires announce that in the semen of syphilitics they have encountered a high percentage of abnormal spermatozoa, two heads, two tails, etc. These abnormalities might serve in the diagnosis of the disease.

Specific Leukocyte Substances

In a recent work Dr. A. Bachmann affirmed that the leukocytes of immunized animals acquire immunizing properties, and that extracts of them possess a curative power superior to extracts of normal leukocytes.

The "Semana Medica"

The weekly review, the *Semana Medica,* celebrated January 18, with a festival gathering, the twenty-fifth anniversary of its foundation.

Injury of Hospital Medical Staff in Recent Uprising

In inaugurating a general strike recently, certain anarchistic elements sought to impart a revolutionary aspect to it, but in general their propositions met with no echo. However, it proved necessary for the police and the army to repress the isolated foci of rebellion. The public hospitals of the capital had to do an enormous amount of work, and some of the staff were barbarously shot at by the revolutionists. While lending his services, one intern of the hospital Ramos Mejia was hit in the right lung by a bullet. This occurred at the very doors of the hospital.

Personal

The professor of physiology, Dr. H. G. Piñero has had a cerebral attack, and on this account has asked to be relieved of his charge.

MEXICO LETTER

Mexico City, Feb. 23, 1919.

Official Regulation of Private Laboratories

The Departamento de Salubridad has issued orders to the effect that the private laboratories which make a practice of the Wassermann test must comply with certain requirements: They must be in charge of a duly registered physician or veterinarian who has obtained by written application a permit from the public health authorities to open the laboratory. The head of the laboratory must present a certificate signed by two honorable and known persons who guarantee the good faith and special skill of the applicant. If there are assistants in the laboratory, each must be certified in the same manner. The Wassermann test must be done not only with the classic procedure but also by the control technic of Hecht and Jacobsthal, and if necessary, the reaction shall be determined not only with the blood serum but with the cerebrospinal fluid. The laboratory shall be equipped with all the apparatus and materials required for this class of studies, a list of the same to be sent to the headquarters of the Departamento. This vigilance on the part of the public authorities will be felt quite severely in the private laboratories.

Regulation of Pharmacies

The discovery of the fact that in certain pharmacies the druggists were substituting for the drugs prescribed by the physician others that were less expensive, has called the attention of the Departamento de Sanidad to the necessity for supervision of pharmacies. The drug store which was discovered *in flagrante delictu* has been closed and vigilant supervision has been extended to the others. A plan is now being discussed for official regulation of pharmacies which will provide for drastic measures against fraud, and will effectively guarantee the sacred interests of the public.

Mexico City, March 3, 1919.

Official Inspection of Public Health Service

The president of the Departamento de Salubridad has left for an inspection trip, intending to visit the sanitary bureaus established in the towns along the border and the sea coast towns, to ascertain by personal inspection how these stations are functioning and to correct the deficiencies noted. During his absence, the secretary of the Departamento will assume his work.

Inmates of Hospital Rebel

Not long ago the inmates of the hospital "Morelos," an institution devoted exclusively to the care of prostitutes with venereal diseases, rebelled and assaulted the police guarding the establishment and tried to escape. It was necessary to resort to forcible measures to restrain them, and several police were wounded. This is the third occasion, within a few months, in which events of this kind have occurred. The matter should be investigated to see if the complaints of the patients are justified and whether the cause might be remedied.

Beggars in Mexico

In order to reduce the large numbers of beggars with which the city is swarming, the authorities have set apart one pavilion in the old Belem prison to adapt it for an asylum for beggars where those incapable of self support will be given food and shelter. The children who have no one responsible for them will be sent to industrial schools, the sick to the hospitals, and those who are simply lazy will be compelled to work. This will leave in the Belem asylum only those who are absolutely incapable of self support from their advanced age or other circumstances.

Law to Combat Vagrancy

Among the numerous bills for proposed legislation which the department for industry, commerce and labor is now studying, is one important bill dealing with a question which has been much discussed but has never been settled in this country. The outline of the bill, which will probably be presented for the consideration of congress during its next session, deals with the disfranchisement of habitual vagrants and prostitutes, depriving them of political rights. According to the proposed bill, this will exclude from voting the habitual drunkards, gamblers, and white slavers and those who have been convicted of crimes against common law.

The Consumption of Food

A local paper, the *Excelsior,* has been publishing an estimate of the food consumed by the inhabitants of this city, investigating the amount of foodstuffs imported and dividing the figures by the estimated population, namely, 800,000. According to this calculation, each person living in the City of Mexico consumes daily 90 gm. of meat, 95 gm. of bread, 357 gm. of maize, 65 of frijol, 11 of potato, 6 of rice, 232 of sugar, and 6 of milk. These figures are only approximative, as a large portion of the flour and sugar are used in the manufacture of pastry and candy which are sold outside of the city. The exact number of the inhabitants is not known at present, the last census having been taken in 1910.

Reciprocity Between Mexico and Spain

The statement quoted recently in The Journal from a Mexican exchange to the effect that the reciprocity treaty between Mexico and Japan is the only reciprocity treaty into which this country has entered is incorrect. Mexico concluded a similar arrangement with the Spanish government some ten years ago.

LONDON LETTER

London, Feb. 19, 1919.

Another Epidemic of Influenza

Influenza has broken out again, making a third wave in less than a year. Generally speaking, the disease retains its now classic form, but there are a few minor points of difference. Attacks tend to begin rather less suddenly and less violently, and the local manifestations in the throat and air sinuses have been fewer. The cases that are complicated by pneumonia tend to follow the usual course of local consolidation, crisis, and slow clearing of the chest, common in the years before the war. This is in contrast with the rapidly fatal septic type with acute toxemia characterizing the summer and autumn epidemics, and suggests a distinct decrease in virulence. Of those attacked previously very few have been again infected. Some immunity seems to have been established, for in most cases of reinfection there are only vague rheumatic pains and malaise lasting a few days.

The Influenza Epidemic in South Africa

In the House of Assembly at Cape Town, Sir Thomas Watt, acting prime minister, gave some interesting statistics of the recent influenza epidemic. In two months the epidemic carried off 11,736 Europeans and 127,700 of the natives and colored population. As in England, the epidemic attacked not the old or the weak but the middle-aged and the strong.

An Ununitable Profession

It is an old complaint that the medical profession is ununited on medicopolitical questions, that it is composed of divergent factions, to say nothing of a large body that will join no association of any kind and take no part in politics. That it is ununitable seems to be shown by the failure of a recent attempt at union. The intention of the government to introduce a ministry of health, which is considered to involve important changes in the relations of the profession to the public, has aroused a good deal of apprehension. This was evidently the cause of a mass meeting of the profession under the chairmanship of Prof. William Russell of Edinburgh being called in London by a circular postcard. The postcard stated that these two resolutions would be proposed: 1. "In view of prospective legislation and the proposed establishment of a ministry of health, and having regard to the experience of the medical profession at the time of the passing of the national insurance acts, the time has arrived when a body representative of the whole profession should be established, to watch the interests and be prepared to act in an advisory capacity as occasion demands," and 2. "That a provisional committee be now formed with the object of securing the election of such a body." About 500 physicians attended. Though the fact was not announced, the meeting had evidently been organized by the National Medical Union, a body composed of nonpanel physicians whose object is "to maintain the freedom of the medical profession in its professional and personal relations with the public and to support the public in maintaining a corresponding freedom." The first resolution, given above, was moved by a member of the union, who pointed out that in these days of democratic and socialistic tendencies it would be suicidal for the medical profession to stand aloof when legislation affecting it was proposed. At present there was no body representative of the profession as a whole. He considered that the British Medical Association had lost the confidence of the profession since the great debacle of 1913. He was alluding to the fact that the majority of its members refused to follow the lead of the representative body which condemned the insurance act as derogatory to the profession and asked the profession not to work it. The resolution was opposed by representatives of the British Medical Association, which protested that it was quite capable of doing what was proposed. Let those who thought they could do better join it, and capture the machine and make it work in their way. To found a new body would only further divide the profession. The first resolution was carried by a majority of 182 against 83. To the second resolution an amendment was proposed: "That in view of the urgency arising from contemplated legislation, the 'Parliamentary Medical Committee' be appointed as the provisional committee for drawing up the constitution of a body to develop along the lines indicated by the first resolution." The formation of the "Parliamentary Medical Committee" for the purpose of promoting medical representation in Parliament was announced in a previous letter to The Journal. It was another attempt to organize and work independently of the British Medical Association. The amendment was opposed on the ground that as a resolution for an entirely new development had been passed, it was inconsistent to extend the powers of an already existing committee. If the Parliamentary Medical Committee wanted larger authority, it ought to appeal to a meeting summoned for the purpose. The amendment was rejected by a majority of 105 against 87. Another amendment was then moved, that "no organization is capable of effectively representing the interests of the medical profession unless it is a registered trade union." This amendment was moved by a representative of the Medical Political Union (a body, as explained in a previous letter, consisting mainly of panel physicians and registered as a trade union). The mover referred, amidst great applause, to the success with which trade unions had made the government "bend the knee." On the amendment being put, the show of hands seemed strongly in favor of it, but the count declared it to be lost by 71 to 73. A recount was demanded from all parts of the hall, but was refused by the chairman, who then found it impossible, because of interruption, to continue the business of the meeting, which he declared closed.

Dr. Cox, secretary to the British Medical Association, in an interview published in the *Morning Post,* said that "the reason why the meeting was such a fiasco was that it was composed of three sections, who are only united in one thing, and that is dissatisfaction with the British Medical Association. First, there is the section which called the meeting, the National Medical Union, whose main object is to fight the national insurance act and all connected with it. Then there is the Medical Political Union, which believes that the only hope for the medical profession is trade unionism. The third body, the Medical and Parliamentary Committee, sprang out of a desire during the recent general election to promote the candidature of medical men for Parliament. The association has held aloof from all these things, because it considers it has the machinery for doing all the great mass of the profession wants in the way of organization, and it would be betraying its principles if it encouraged the setting up of sectional bodies for purposes which the association is quite capable and willing to carry out, with the exception of trade unionism, which the association does not believe in. It has proved on countless occasions that it is both able and willing to defend the interests of the profession. The answer the association would give to the people who were at that meeting, and who evidently did not know what they wanted, is that the proper field for their energies would be inside the association helping to reform it, if they think it needs reforming, rather than give the outside public the idea that the medical profession is a disorganized mob which does not know what it wants."

PARIS LETTER

Paris, Feb. 13, 1919.

Death of Professor Blanchard

Dr. Raphael Blanchard, professor of parasitology and medical natural history in the Paris faculty of medicine, has just died at the age of 62 years. The death of this noted savant is a distinct loss to French science. He was an authority in matters of human parasitology and was the representative of France at many international congresses. He was born Feb. 28, 1857, at Saint-Christophe (département d'Indre-et-Loire), the grand-nephew of the celebrated French aeronaut, Pierre Blanchard. He began his medical studies in Paris in 1874. In 1876 he became the assistant of Pouchet in the department of zoologic histology. Later, he worked under Paul Bert at the Sorbonne as assistant in physiology. In 1883 he was made a professor of the Paris medical faculty, and in 1897, on the death of Professor Baillon, he was called to the chair of medical natural history in the same faculty. At his request, this chair became the chair of parasitology and medical natural history in 1907. In 1894, he was made a member of the Académie de médecine in the section of therapeutics and medical natural history, and for seven years he has served as secretary. In 1902, Professor Blanchard founded the Institut de médecine coloniale, and was also instrumental in founding an organization to fight the spread of contagion by insects. For twenty years he was secretary general of the Société zoologique de France. In 1889, assisted by Professor A. Milne-Edwards, he organized the Congrès international de zoologie which, since then, has met triennially, and of which he was the permanent secretary general. Besides, he was one of the founders of the Société française d'histoire de la médecine, and was its first president. He founded the *Archives de Parasitologie,* which is published in several languages. He is the author of numerous articles on zoology, anatomy and comparative physiology, anthropology, and history of medicine, but his principal works were on the parasitic origin of disease. He was also the author of a "Traité de zoologie médicale," (1885-1888), and of a book on mosquitoes (1905). He had also begun a "Corpus inscriptionum," a collection of inscriptions and epitaphs, devoted to medicine and biology.

Tribute to French Surgeons

In an eloquent address delivered by Dr. Louis Mourier, under secretary of state for the Service Santé militaire, at the annual meeting of the Société de chirurgie de Paris, he dwelt on the splendid work done by French surgeons during the war, expressing the gratitude both of the army and of the nation. Between March 1 and Nov. 11, 1918, more than one million wounded, sick and gassed persons had been brought in by the Service de Santé and distributed in hospitals. More than one half of this number were able to return to their army detail after several weeks, clinically cured.

Medical Service in the Liberated Regions

At the last meeting of the Association générale des médecins de France, Dr. Thierry, deputy from the *département de la Meuse,* stated that the minister of the liberated regions had decreed that each doctor who will return to his home in the liberated regions will receive a monthly compensation of 500 francs for the succeeding two years. Furthermore, he will be furnished with a vehicle: automobile, side-car, etc. The undersecretary of state of the Service de Santé militaire has ordered that the needed instruments be lent to these doctors.

Trephining in a Front Line Serbian Hospital

At a recent meeting of the Société de chirurgie de Paris, Dr. Petrowitch reported statistics in trephining made in a front line Serbian army hospital. Of 152 cases of head wounds received at this hospital, 69 per cent. terminated fatally, more or less rapidly, without having been operated on. In the other cases trephining was done and proved successful in 76 per cent. The patients who did not present an open cerebral lesion, that is to say, without a lesion of the dura mater, all recovered (15 cases). The cases in which there existed wounds of the dura mater and of the brain, gave 63 per cent. of cures (15 recoveries and 9 deaths). These statistics confirm the results obtained on the field of battle by French surgeons.

Children's Welfare Bureau of the American Red Cross

Dr. B. Weill-Hallé of Paris recently reported to the Société de pédiatrie on the activities of the Bureau de l'Enfance of the American Red Cross. The first contingent, under the direction of Dr. W. B. Lucas of the University of California, arrived in France, Aug. 12, 1917. The personnel of this child welfare bureau numbered 450, including doctors, nurses, hygienists, secretaries, lecturers, etc. Its aim was to give immediate aid to the children of the refugees, repatriates, etc., and to seek to offset the loss from the low birth rate of France. The first part of this work was done at Meurthe-et-Moselle, Nelles, Amiens, and Evian, where 65,000 examinations of children were made, at Lyons, etc. To carry out the second part of its program, the bureau carried on an energetic propaganda from three different sides: propaganda by the doctors in the dispensaries and the *consultations de nourrissons;* propaganda by the visiting nurses, and by means of general publicity, making use of tracts, brochures, posters and placards, picture post cards, cinematograph films, addresses and exhibits. As a result of the activities of the devoted corps of nurses under the direction of Miss Ashe, a school for visiting nurses for children has been organized at Lyons and at Paris. Dr. Weill-Hallé also reported on the work done by the Patronage franco-américain de la première enfance in one of the wards of Paris, the XLV-e arrondissement. This organization has taken charge of all the births in this ward, visiting the homes of all the mothers.

Donation of Argentine Physicians to French Medical Relief Fund

The doctors of the Argentine republic have manifested their regard for France by constituting a Comité de secours for their French confrères who have become victims of the war. A subscription fund has been started and 41,500 francs have been turned over to the *Caisse de secours de guerre,* the war relief fund, of the Association générale des médecins de France.

Deaths

Richard Andrews Reeve, Toronto, Ont.; Queens University, Kingston, Ont., 1865; University of Toronto, 1889; aged 76; a specialist on diseases of the eye and ear; lecturer on diseases of the eye and ear in the *Toronto School of Medicine* from 1872 to 1887, and since 1887 professor of ophthalmology and otology in the University of Toronto; dean of the Faculty of Medicine from 1906 to 1908; for twelve terms president of the Alumni Association of the University; founder of the Reeve Scholarship; a member of the council and senate of the University of Toronto, and of the board of regents of Victoria University, Coburg, Ont.; member of many scientific societies; past president of the British Medical Association, of the Canadian Medical Association and of the Toronto Academy of Medicine; who had conferred on him the honorary degree of LL.D. by the University of Toronto, in 1902 and by McGill University, Montreal, and the University of Birmingham, England, in 1911; one of the most striking personalities in the medical profession of the dominion; an operator of high rank; died suddenly on the street in Toronto, January 27.

Thomas Addis Emmet, New York City; Jefferson Medical College, 1850; aged 91; a member of the Medical Society of the State of New York; who was appointed visiting physician to the Emigrant Refuge Hospital, Ward's Island, in 1851; assistant surgeon to the Woman's Hospital in the State of New York in 1855; surgeon in chief of the institution from 1861 to 1872, and since that time visiting surgeon or consulting physician or surgeon to many public hospitals in New York City; an eminent gynecologist who introduced many new operations and methods of treatment; author of a textbook which has been standard for many years on "Principles and Practice of Gynecology"; a world figure in the fight for Irish home rule; who had conferred on him by the pope the title of Knight Commander of St. Gregory the Great in 1906, and the Laetere Medal by Notre Dame University, South Bend, Ind., as an award to the Roman Catholic whose work had been of the greatest benefit to humanity; died at his home, March 1.

John Waite Mitchell ⊕ Providence, R. I.; Bellevue Hospital Medical College, 1871; aged 70; visiting physician to the Rhode Island Hospital, Providence, from 1875 to 1883; president of the Rhode Island State Medical Society from 1889 to 1891; and of the Rhode Island Emergency and Hygiene Association and president of the Providence Medical Society from 1886 to 1889; trustee and consulting physician to the Providence Lying-In Hospital; and consulting physician to St. Elizabeth's Home and the Rhode Island Catholic Hospital, Providence; died at his home, February 27, from pneumonia.

William Hughes Wells, Philadelphia; Jefferson Medical College, 1891; aged 59; a member of the Medical Society of the State of Pennsylvania; assistant professor of obstetrics in his alma mater since 1913; assistant obstetrician to Jefferson Medical College Hospital; physician to Willing's Day Nursery, Philadelphia; a fellow of the College of Physicians of Philadelphia; author of several works on gynecology and obstetrics; died in the Jefferson Hospital, February 26.

Alfred Whitehead, Baltimore; Baltimore University, 1890; M.R.C.S., Queens College, Birmingham, England, 1871; aged 70; ship surgeon of the Peninsular and Oriental Steamship Company from 1872 to 1878; professor of diseases of children in the Baltimore School of Medicine from 1884 to 1889; and professor of anatomy and clinical surgery from 1889 to 1894; died at his home, February 27, from heart disease.

James L. McLean, Greenwood, Miss.; University of Louisville, Ky., 1875; aged 64; at one time a member and first vice president of the Mississippi State Medical Association; formerly professor of clinical gynecology in the College of Physicians and Surgeons, Memphis, Tenn.; local surgeon of the Illinois Central and Southern railways; died at his home, about February 21, from cerebral hemorrhage.

George E. Schuyleman, Portland, Ore.; Lincoln (Neb.) Medical College, Eclectic, 1904; aged 43; formerly of Glenville, Neb.; who had assumed the practice of a physician at Natko, Kan., during the recent influenza epidemic, and suffered a breakdown, was found hanging from the wheel of an irrigation headgate near Scott's Bluff, Neb., February 24.

Leo Louis Cahill, Springer, N. M.; University of Illinois, Chicago, 1898; aged 47; at one time a member of the New Mexico Medical Society; local surgeon of the Santa Fe System for several years; who broke down from overwork during the influenza epidemic, and was removed first to Raton, N. M., and later to the Woodcroft Hospital, Pueblo, Colo.; died in that institution, January 26.

William Shackelford, The Dalles, Ore.; Jefferson Medical College, 1861; aged 80; a pioneer practitioner of Oregon and Washington; surgeon of the *94th New York Volunteer* Infantry during the Civil War, and later surgeon, U. S. Army, until 1870; for several terms a member of the city council of The Dalles, and until recently health officer of the city; died at his home, February 21.

John Chandler Wysor ⊕ Clifton Forge, Va.; College of Physician and Surgeons, Baltimore, 1878; aged 64; a member of the Southern Surgical and Gynecological Association; for many years chief surgeon of the Cresapeake and Ohio Railway Hospital, Clifton Forge, and thereafter consulting surgeon; died at his home, February 23, from pneumonia.

John C. Pickett, Nelsonville, Ohio; College of Physicians and Surgeons, Baltimore, 1896; aged 51; a member of the Ohio State Medical Association; died at his home, February 25, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health.

William Benjamin Jones ⊕ **Lieut., M. C., U. S. Army,** Rochester, N. Y.; College of Physicians and Surgeons, 1884; aged 57; consulting surgeon to the Willard State Hospital, and the Craig Colony for Epileptics; surgeon to St. Mary's Hospital, Rochester; died suddenly in his automobile, March 1.

Timothy Matlack Cheesman ⊕ Garrison-on-Hudson, N. Y.; College of Physicians and Surgeons of the City of New York, 1878; aged 66; a fellow of the New York Academy of Medicine, and a member of the American Bacteriological Society; died at his home, February 25, from cerebral hemorrhage.

Frederick Mathews, New York City; College of Physicians and Surgeons in the City of New York, 1883; aged 58; a member of the Medical Society of the State of New York; visiting surgeon to the German Polyclinic Hospital, and to the Stuyvesant Polyclinic; died at his home, February 28.

Clarence Edward Farish ⊕ **Lieut., M. C., U. S. Army,** Mobile, Ala.; University of Alabama, Mobile, 1906; aged 36; while driving his automobile over a grade crossing at Brewton, Ala., February 20, was struck by a train and died from his injuries while being taken to a hospital in Mobile.

Hyman Caro ⊕ **Capt., M. C., U. S. Army,** Chelsea, Mass.; Harvard Medical School, 1914; aged 29; formerly a member of staff of the Monson State Hospital, Palmer, Mass.; on duty with the American Expeditionary Forces; died in Mars, France, January 22, from bronchial pneumonia.

Hugh David Ward ⊕ **Asst. Surg., U. S. P. H. S.,** Southport, N. C.; University of Pennsylvania, Philadelphia, 1914; aged 33; on duty in the extracantonment zone around Camp Wadsworth, Columbia, S. C.; died in Spartanburg, S. C., February 18, from pneumonia following influenza.

George Riley Cate, Brookline, Mass.; Bowdoin Medical School, Brunswick and Portland, Me., 1894; aged 51; medical director of the Fisk Hospital, Brighton, Boston; who was struck by a trolley car, February 21; died from his injuries in Fisk Hospital a few hours later.

Julian W. Sloan ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1904; aged 40; assistant professor of clinical medicine in the University College of Medicine, Richmond, Va.; city physician for the west end district of Richmond; died at his home, February 26.

Thomas Benton Dickson, Ramona, Okla.; Memphis (Tenn.) Hospital Medical College, 1895; aged 50; a member of the Oklahoma State Medical Association; also an oil man; was robbed and beaten to death in his room in a hotel in Kansas City, February 22.

John Eberly Kuykendall ⊕ **Capt., M. C., U. S. Army,** Eugene, Ore.; Cooper Medical College, San Francisco, 1912; aged 33; in command of the 361st Ambulance Company, A. E. F.; died in LeMans, France, February 23, from meningitis.

Douglas Blair Mayes ⊕ Americus, Ga.; Vanderbilt University, Nashville, Tenn., 1906; aged 36; secretary of the Sumter County Medical Society from 1915 to 1917; city physician of Americus for several years; died at his home, February 14.

William Wirt Piper, Cleveland; Dartmouth Medical School, Hanover, N. H., 1867; aged 79; assistant surgeon of the Thirteenth United States Heavy Artillery during the Civil War; died at his home, February 24, from heart disease.

⊕ Indicates "Fellow" of the American Medical Association.

Frank B. Florentine ⊕ Saginaw, Mich.; Rush Medical College, 1876; aged 68; surgeon and gynecologist to St. Mary's Hospital and Saginaw General Hospital, and Women's Hospital, Saginaw, Mich.; died at his home, January 31, from diabetes.

George Aloysius Cunningham, Philadelphia; Jefferson Medical College, 1904; aged 39; formerly surgeon to the Western Pennsylvania Hospital, Pittsburgh; died in the University Hospital, Philadelphia, February 21, from pneumonia.

Charles D. Hildebrand, Loganville, Pa.; College of Physicians and Surgeons, Baltimore, 1881; aged 59; a member of the Medical Society of the State of Pennsylvania; died at his home, about February 25, from cerebral hemorrhage.

Britain W. Lockhart, Lula, Ga.; Medical College of Georgia, Augusta, 1883; aged 67; president of the Hall County Medical Society in 1914; also an ordained minister; died at his home, February 11, from pellagra.

Joseph T. Bryan, Louisville, Ky.; Pulte Medical College, Cincinnati, 1883; aged 59; professor of obstetrics and clinical pediatrics, in the Southwestern Homeopathic Medical College, Louisville; died at his home, February 23.

George W. Finch, Los Angeles; California Eclectic Medical College, Los Angeles, 1890; aged 64; professor of materia medica and therapeutics in his alma mater; died at a hospital in Los Angeles, about February 23.

James N. Porter, Boyes, Mont.; for many years a practitioner of Prairie City, Iowa; aged 76; a veteran of the Civil War; died at the home of his daughter in Boyes, February 10, from cirrhosis of the liver.

Abraham H. Lifchutz, Chicago; Barnes Medical College, St. Louis, 1899; aged 49; at one time a member of the Illinois State Medical Society; died at his home, February 28, from mediastinal tumor.

Nathan Ziegenfuss ⊕ South Bethlehem, Pa.; Jefferson Medical College, 1892; aged 69; formerly president of the South Bethlehem board of health; died at his home, about February 24.

Daniel Webster Roberts, St. Augustine, Fla.; Jenner Medical College, Chicago, 1896; aged 52; a colored practitioner; died at his home, about February 21, from pneumonia.

William Gray Adams, Boston; Harvard Medical School, 1897; aged 46; for eight years an instructor in Tufts College Medical School, Boston; died at his home, January 2.

Marriages

James Newton Alexander, Capt., M. C., U. S. Army, Roundup, Mont.; chief operating surgeon, Base Hospital No. 39, Base Section No. 7, La Rochelle, France, to Mlle. Germaine Kiere of Antwerp, Belgium, at La Rochelle, February 8.

Andrew Morton Carr, Jr., Lieut., M. C., U. S. Army, Chicago, on duty with the Presbyterian Hospital Unit, A. E. F., at Limoges, France, to Miss Ruth Carolyn Bennett of Springfield, Ill., at Limoges, recently.

Floyd Elwood Keene, Capt., M. C., U. S. Army, Philadelphia, on duty with the Pennsylvania Base Hospital No. 20, A. E. F., to Miss Martha Bussiere at Chatel-Cuyon, France, January 27.

John Howard Hall, Capt., M. C., U. S. Army, Atlanta, Ga., on duty at Rockwell Field, San Diego, Calif., to Miss Irene Jeanne Hawkins of Sacramento, February 10.

Frank Leech, Major, M. C., U. S. Army, Washington, D. C., on duty at Fort Sill, Okla., to Miss Myrtle Adele Tatum of Tatum, Va., February 9, at Greenville, S. C.

Herbert Alexander Bruce, Col., F. R. C. S., A. M. S., Toronto, Ont., to Miss Angela Hall, at St. Margaret's Church, Westminster, London, England, February 3.

Benjamin Harrison Adams, Asst. Surg., Lieut. (j. g.), U. S. N. R. F., Ocheyedan, Iowa, to Miss Marguerite Schaefer of Highland Park, Ill., recently.

Maurice Charles Pincoffs, Jr., Lieut., M. C., U. S. Army, Chicago, to Miss Katherine Brune Randall of Baltimore, at Catonsville, Md., March 1.

Hugh Miller Moore to Miss Elizabeth Beaton, both of Oxford, Ohio, February 19.

Morris Cassel to Miss Edith Kessler, both of Brooklyn, February 16.

The Propaganda for Reform

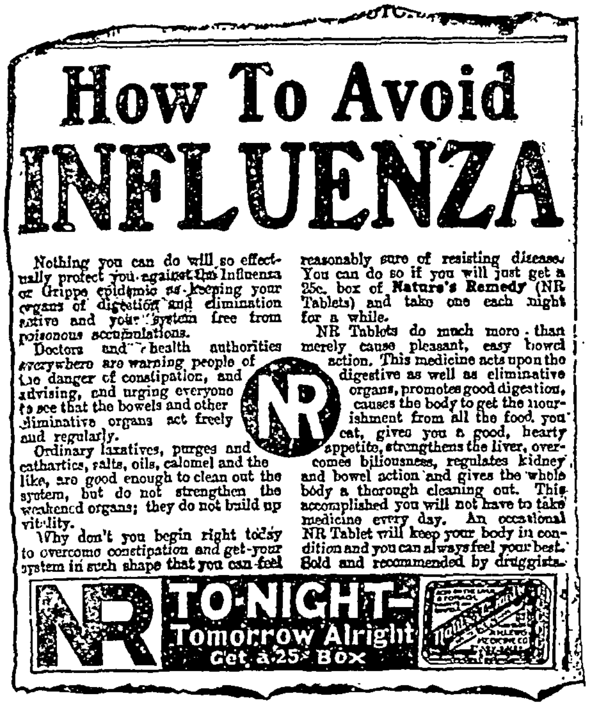
In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

NATURE'S REMEDY TABLETS

A. H. Clark, Ph.G., B.S.

From the Chemical Laboratory of the American Medical Association

"Nature's Remedy" is manufactured by A. H. Lewis Medicine Co., St. Louis. It is sold in 25 cent, 50 cent, and $1 packages. Three of the largest size packages were purchased on the open market and examined in the Association's Chemical Laboratory. Nature's Remedy comes in a tin box, containing an advertising circular, a guarantee blank, and 180 tablets. The advertising circular states that Nature's Remedy is a vegetable preparation and "acts on the stomach, liver, kidneys, and bowels," that it contains no digestives, but that its "purpose in dyspepsia, indigestion, bad breath, loss of appetite, sick headache, and rheumatism is to increase the elimination and keep the intestinal tract clean." The greater part of the circular is devoted to the exploitation of other nostrums of the A. H. Lewis Medicine Co.—"nerve pills," a liniment, headache tablets, and "Sans-Pareil" an "emmenagogue and uterine tonic." The list of diseases and indications for which these alleged remedies are recommended on this circular number about fifty.



How To Avoid
INFLUENZA

Nothing you can do will so effectually protect you against the Influenza or Grippe epidemic as keeping your organs of digestion and elimination active and your system free from poisonous accumulations.

Doctors and health authorities everywhere are warning people of the danger of constipation, and advising, and urging everyone to see that the bowels and other eliminative organs act freely and regularly.

Ordinary laxatives, purges and cathartics, salts, oils, calomel and the like, are good enough to clean out the system, but do not strengthen the weakened organs; they do not build up vitality.

Why don't you begin right today to overcome constipation and get your system in such shape that you can feel reasonably sure of resisting disease. You can do so if you will just get a 25c. box of **Nature's Remedy** (NR Tablets) and take one each night for a while.

NR Tablets do much more than merely cause pleasant, easy bowel action. This medicine acts upon the digestive as well as eliminative organs, promotes good digestion, causes the body to get the nourishment from all the food you eat, gives you a good, hearty appetite, strengthens the liver, overcomes biliousness, regulates kidney and bowel action and gives the whole body a thorough cleaning out. This accomplished you will not have to take medicine every day. An occasional NR Tablet will keep your body in condition and you can always feel your best. Sold and recommended by druggists.

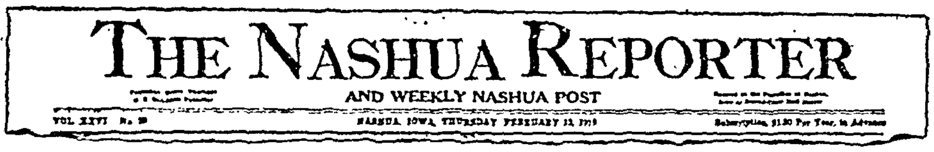
NR TO-NIGHT—
Tomorrow Alright
Get a 25c Box

Of course the epidemic of respiratory disease was capitalized.

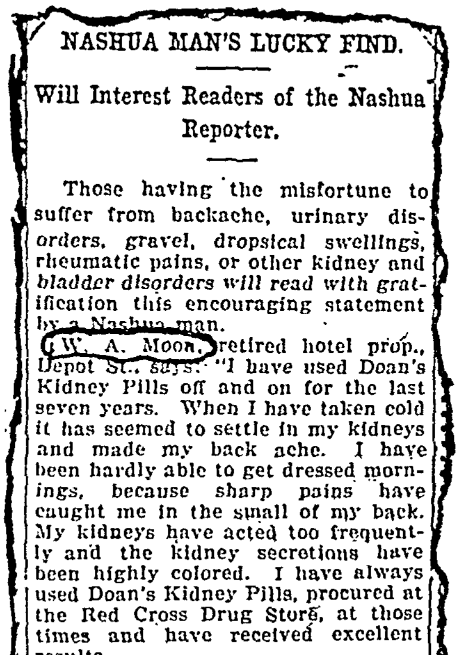
A booklet issued by the A. H. Lewis Medicine Co. gives a "formula"(?) for Nature's Remedy. It is stated that there are *ten* ingredients entering into its composition. The manufacturers generously name *seven* of these ingredients and admit that "were it not for the vast number of imitators who are ever ready to prey upon the business of established firms and the public we would gladly print the entire formula, for we are even more proud of the three unnamed than we are of the ones given."

The seven ingredients are Burdock, Juniper, Sarsaparilla, Mandrake, Rhubarb, Dandelion and Prickly Ash. There was so little about these to make one share the feeling of pride expressed by the exploiters that diligent search was made for the unnamed three on the chance that something worthy of mention might be found. Chemical analysis showed the presence of aloes, and traces of some alkaloidal drug. The tablets had the characteristic odor of aloes. Extracted with diluted alcohol, an extract representing 61.2 per cent of the tablet material was obtained. Extracted successively with ether, chloroform, and alcohol, a total of 63.6 per cent extractive was obtained. Extracted with water, an extractive representing 50 per cent was obtained. In every case the extractive resembled aloes in color, odor, and taste and gave the characteristic borax color reaction described in the U. S. Pharmacopoeia.

DOAN'S KIDNEY PILLS—TESTIMONY FROM THE TOMBS NO. 5



THE NASHUA REPORTER
AND WEEKLY NASHUA POST



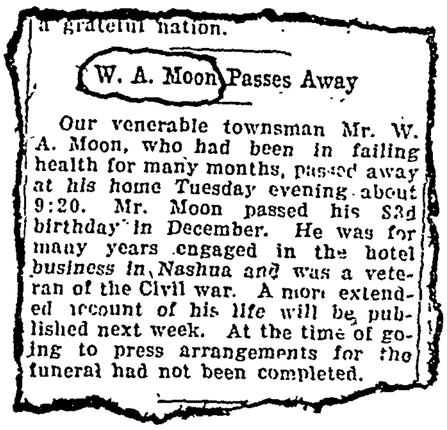
NASHUA MAN'S LUCKY FIND.

Will Interest Readers of the Nashua Reporter.

Those having the misfortune to suffer from backache, urinary disorders, gravel, dropsical swellings, rheumatic pains, or other kidney and bladder disorders will read with gratification this encouraging statement by a Nashua man.

W. A. Moon, retired hotel prop., Depot St., says: "I have used Doan's Kidney Pills off and on for the last seven years. When I have taken cold it has seemed to settle in my kidneys and made my back ache. I have been hardly able to get dressed mornings, because sharp pains have caught me in the small of my back. My kidneys have acted too frequently and the kidney secretions have been highly colored. I have always used Doan's Kidney Pills, procured at the Red Cross Drug Store, at those times and have received excellent results.

Mr. Moon is only one of many Nashua people who have gratefully endorsed Doan's Kidney Pills. If your back aches, if your kidneys bother you, don't simply ask for a kidney remedy, ask distinctly for DOAN'S KIDNEY PILLS, the same that Mr. Moon had, the remedy backed by home testimony. 60 cents at all stores. Foster-Milburn Co., Props. Buffalo, N. Y. "When your back is lame—remember the name."



a grateful nation.

W. A. Moon Passes Away

Our venerable townsman Mr. W. A. Moon, who had been in failing health for many months, passed away at his home Tuesday evening about 9:20. Mr. Moon passed his 83d birthday in December. He was for many years engaged in the hotel business in Nashua and was a veteran of the Civil war. A more extended account of his life will be published next week. At the time of going to press arrangements for the funeral had not been completed.

Two clippings from the *Nashua Reporter* of Feb. 13, 1919. The Doan's Kidney Pills advertisement opines that Nashua citizens "will read with gratification" the "encouraging statement" of Mr. W. A. Moon. *The encouragement will doubtless be tempered by the information given on another page of the same paper showing that Mr. Moon had been dead two days when his testimonial appeared.*

Since this examination accounted for but one of the mysterious *trio of* drugs, it was decided to make a microscopic examination, and the aid of E. N. Gathercoal, Instructor in Pharmacognosy in the University of Illinois School of Pharmacy, was sought. The microscopic examination confirmed the chemical findings as to aloes, and also established the presence of powdered cascara sagrada in abundance. Evidence of belladonna root in small quantities was also found and since the chemical examination showed traces of alkaloidal drug present it is possible that the third mysterious stranger is belladonna root. The microscopist's report further stated that rhubarb, as well as all the other seven named drugs, if present at all, are there in such small quantities that no evidence of their presence could be seen.

Let us analyze these analyses: *Aloin, the active constituent of aloes, has some of the characteristics of aloes but the dose is much less, namely, ¼ grain. A small proportion of aloin added to the tablets would greatly increase their activity. Further, one of the seven drugs mentioned as being in Nature's Remedy is mandrake, whose active constituent is the resin, podophyllin, one of the most powerful hydragogue cathartics known.*

As examination failed to show mandrake present, it was decided to give the tablets a physiologic test. One tablet, taken in the late afternoon according to directions, resulted in profuse watery stools early the following morning, the effect continuing through the day. As the amount of powdered cascara and aloes shown to be present in this tablet could not possibly have such violent hydragogue effect, it therefore seems evident that the mandrake is present as podophyllin, and that aloin is present with the aloes.

A little consideration of the dosage of the drugs mentioned in connection with Nature's Remedy shows clearly the absurdity of such a shotgun mixture, assuming that the drugs mentioned are really there. A table will better convey the idea. The doses given are taken *from the* U. S. P., N. F., *or* U. S. Dispensatory, and are average doses:

	Average dose of the drug in grains	Assuming the drugs present as extracts, the dose, in grains, would be about
Burdock	30	6
Juniper berries	60	12
Sarsaparilla ...	30	6
Mandrake	5	1 (podophyllin ⅙)
Rhubarb	15	5
Dandelion	150	30
Prickly ash ...	30	6
Aloes	4	2 *(aloin ¼)*
Cascara	15	3
Belladonna root	1	⅕
	340	71

A tablet containing a single average dose of each of the above drugs would weigh 340 grains if the drugs are simply powdered—as they are claimed to be in Nature's Remedy. If they are represented by their extracts the tablet would still weigh about 70 grains. Yet each Nature's Remedy tablet weighs but 5 grains, of which only 3 grains is medicament! Of course, we should not expect a full dose of each of the drugs, and since there are ten of them, let us say that 1/10 *of a dose of each should* be present. The tablets *should* still weigh *34 grains, if* powdered drugs are present, and about 7 grains if the extracts are used. Since the seven named by the manufacturers are either not present at all or only in very small amounts, our consideration of dosage can be confined to aloes, cascara, belladonna root, and mandrake. Since the microscopic examination showed Nature's Remedy to be largely powdered cascara, the cathartic effect must be due to some very powerful drug since the tablets contain only about 3 grains of medicament. The dose of aloes is 4 grains or more, therefore there is scarcely room for even a moderate dose of aloes along with the cascara, unless it be present as aloin. Thus we cannot account for the active cathartic effect without assuming the presence of some powerful drug like podophyllin or aloin.

Nature's Remedy then is, essentially, aloes or aloin, cascara, and belladonna with, probably, podophyllin. This is such a common cathartic mixture that pills or tablets containing essentially the same ingredients can be purchased in almost any drug store. The manufacturers of these tablets direct the purchaser to take one every night for a week. They very kindly allow the sufferer (from the effect of the tablets) a few days to recuperate and then suggest that the week of torment be repeated and if this is survived, another few days of rest is allowed before another round of torture and so on "until the bowels become strong enough to do their work." The ill effects of such violent treatment have been enlarged upon so often that it is pernicious to suggest that such a course of treatment be followed.

Correspondence

OCCURRENCE OF PAROTITIS IN INFLUENZAL PNEUMONIA

To the Editor:—I was very much interested in the communication from Dr. Thomas F. Reilly, entitled "Three Signs of Some Value in the Diagnosis of Unusual Cases of Influenza" (The Journal, Dec. 7, 1918, p. 1935). That part of the article describing involvement of the orifice of Steno's duct was particularly interesting. In two cases of pneumonia following influenza that I treated recently, I paid close attention to the involvement of Steno's duct, and I am able to corroborate the findings of Dr. Reilly. In both of the cases there was a typical lobar pneumonia temperature, and the crisis was reached on the ninth day. The interesting point about the two cases was the occurrence of parotitis, which appeared with the crisis. One case developed overnight, and the swelling was as pronounced as in that of a case of specific parotitis. The following afternoon, in speaking to the nurse in attendance on the other patient, I remarked about having a case complicated by mumps. She said that her patient had a swelling under the right ear. On examination I found another case of parotitis. Both patients suffered intense pain for the first twenty-four hours, and required morphin; but with constant application of the ice cap the temperature, which rose after the swelling, became normal, and recovery was uneventful.

J. Maxey Dell, M.D., Gainesville, Fla.

AN EARLY REFERENCE IN MEDICAL LITERATURE TO THE RELATION BETWEEN FOCAL INFECTION AND ARTHRITIS

To the Editor:—In the summer of 1914, while on a medical pilgrimage originally planned for European centers, but unexpectedly diverted to Boston (I was one of those who took passage on the North German Lloyd steamer *Kronprinzessin Cecilie* for Plymouth, England, July 29, and the impending outbreak of war, August 3, determined a change of course of this vessel westward to Bar Harbor), I chanced to be in the office of Dr. George Shattuck, where, in looking over an edition of Dr. Benjamin Rush's "Medical Inquiries and Observations," which he had just acquired, my attention was drawn to the following case history appearing under the caption, "An Account of the Cure of Several Diseases by the Extraction of Decayed Teeth":

> Some time in the month of October, 1801, I attended Miss A. C., with a rheumatism in her hip joint, which yielded for awhile to the several remedies for that disease. In the month of November it returned, accompanied with a severe toothache. Suspecting that the rheumatic affection was excited by the pain in her tooth, which was decayed, I directed it to be extracted. The rheumatism immediately left her hip and she recovered in a few days.
>
> I cannot help thinking that our success in the treatment of all chronic diseases would be very much promoted by directing our inquiries into the state of the teeth in sick people, and by advising their extraction in every case in which they are decayed. It is not necessary that they should be attended with pain, in order to produce diseases, for splinters, tumours and other irritants before mentioned often bring on disease and death, when they give no pain and are unsuspected as causes of them.

The edition of Rush in which this appeared had belonged formerly, I believe, to Dr. James Jackson, subsequently to the late Dr. Arthur T. Cabot, from the sale of whose library it was secured by Dr. Shattuck. Two years later, on the occasion of a visit to Sir William Osler at Oxford, I noticed a set of these volumes in his library and called his attention to the account of the case recorded above. It is due largely to his suggestion that I write to The Journal to invite attention to the occurrence of this early reference to focal infection and secondary arthritis. It may be of literary interest to note here that the delay to do so until now has been due to inability to find the reference again in any of the editions of Rush that I had an opportunity of consulting while abroad. A search for it in the libraries of the Royal College of Surgeons, the Royal Society of Medicine and the British Museum was unavailing, and not until recently did I discover why this reference could not be located in any of the editions accessible to me in London. Through the courtesy of Lieut.-Col. Fielding H. Garrison, M. C., U. S. Army, I was enabled to see the editions of Benjamin Rush's "Medical Inquiries, etc.," in the Surgeon-General's Library at Washington, and then I found that the case history referred to had originally appeared in 1803, in the "Medical Repository" (Vol. VI, Art. XII, p. 285) in the form of a letter written by Rush to the editor. Therefore, only the editions of "Medical Inquiries, etc.," published subsequent to 1803 contained the reference, namely, those of 1815 and 1819. It appears on p. 199, in Vol. I, of the 1815 edition, and on p. 197, Vol. I, of the fifth edition, published in 1819.

F. L. Pleadwell, Capt., M. C., U. S. Navy.

MADURA FOOT IN CUBA

To the Editor:—In Queries and Minor Notes (The Journal, No. 16, 1918, p. 1684) appeared a communication about Madura foot (mycetoma) in the United States. In the bibliography appended to the note, no mention is made of a very detailed monograph about the matter, written in 1901 by Drs. Antonio Díaz Albertini and Cárlos M. Desvernine, and read before the Tercer Congreso Pan Americano, held in Havana in February, 1901, and published in the *Revista de Medicina Tropical,* May, 1901, and reprinted in the *Boletín "Sanidad y Beneficencia,"* March-April, 1918, pp. 319-330, in the Section "Historia Médica de Cuba," by Dr. José F. de Pazos, with the photographs of the two cases studied. These cases are of interest as being the first cases of Madura foot found and described in Cuba. Dr. Vincent of Val de Grâce, who studied the histologic findings, sent to him by Dr. Díaz Albertini, concluded that:

1. The photographs were surely of cases of Madura foot.
2. The histologic preparations showed the streptothrix, with the same characters as those revealed in examinations made by him of pus from the nodules of Madura foot.
3. The preparations sent to him by Drs. Albertini and Desvernine were the same as those prepared by himself.

In Cuba, it seems probable that *Discomyces madurae* (Vincent, 1894) was present in negro slaves when the Spanish governed the island. At present it is very rare: since the report of Albertini and Desvernine, there have not been found any other cases of Madura foot in Cuba. Other species of *Discomyces,* such as *Discomyces asteroides* (Eppinger, 1890), have been found two times by Dr. Pazos in the sputum of tuberculous patients. *Discomyces minutissimus* (Guchardt, 1859) is very frequent in cases of erythrasma in Cuba. Dr. Pazos also has found *D. bovis, D. israeli* and *D. thibiergii* in cases of abscess of the inferior maxilla in Cuban patients.

Dr. W. Octavio Montoro, Havana, Cuba.
Chief of Press and Publications, Secretaría de Sanidad.

"PHYSICIANS' EXEMPTIONS FOR INCOME TAX"

To the Editor:—Your comments on "Physicians' Exemptions for Income Tax" (The Journal, Feb. 22, 1919, p. 576) were very instructive—in my own case, a great deal more so than you could have imagined when you published the editorial.

What did it teach me? First, of course, that I have been paying needlessly money as a tax on things that were exempt. But after I had worked out my tax papers and scanned them at leisure, it taught me this much more: I had *imagined that* I had about a 7,000 dollar practice, being a "true physician, and a poor bookkeeper." On seeing the actual figures, I found that it ran about $5.300 total collections. After deducting actual business running expenses, I was shocked to find my "7,000 dollar practice" dwindle to a paltry $3,400.

On further observation, I have been shocked at the items of expense. My automobile upkeep is the worst shock. I also keep a horse, which I use when the snow blocks the roads; but as the cold rides exposed to the weather are less inviting than the warm interior of my car, I have often been tempted to plow through the snow with the car. My gasoline consumption has been about 15 miles to the gallon in the summertime; but on investigation I find that a gallon, costing here 40 cents, takes me through the snow less than 5 miles, so hereafter, as the horse eats as much whether I use him or not, I shall use the horse, when it is only a matter of comfort.

Thanks for the lesson you have taught me, and the amount, many times the cost of The Journal, that you have saved me at one sitting.

E. S. Pomeroy, M.D., Winter Quarters, Utah.

GREEK ROOTS AND ENGLISH WORD FORMATION

To the Editor:—I have read with interest the editorial on page 654 of the issue of March 1 entitled "Food and Bacteria—the New Bromatherapy." My classical ear was somewhat offended by this term. As you used the correct Greek derivation in the first column on page 655 in the word "bromatology," the contrast with the second word therefrom, namely, bromatherapy, was acutely accentuated. Since the genitive is always used in introducing English words of Greek origin, I hardly need inform your classical editor that "bromatos" is the correct form for compounded words. In order that you may not fall into similar error in the future, I am taking the liberty of sending you a reprint of my essay on Bromato-Therapy.

Yours in the interest of Homer and Socrates, Æsculapius and Hippocrates, H. W. Wiley, M.D., Washington, D. C.

[Comment.—When our correspondent states that "the genitive is always used in introducing English words of Greek origin" the philological ear is offended, for such is not the case. Only the genitive *stem* is used, namely, in this case βρωματ-, and not the genitive form βρώματος. There are in our medical dictionaries a number of words containing the same error pointed out by the writer, for example, "hemapoiesis," "somatome" and "bromatoxism," found in the "American Illustrated Medical Dictionary." However, we are grateful for the criticism, and are glad to know that we have in our old friend an earnest advocate of linguistic purity in the matter of word formation when Greek roots are involved.—Ed.]

German Substitutes in War Surgery.—The *Medical Supplement* compiled by the British Medical Research Committee gives an account of some of the substitutes for surgical materials employed by the Germans during the war. Many soap substitutes were tried, but the soda preparations seem to be the only successful ones. Spirits of wine (containing 70 per cent. alcohol) was used for washing the hands and instruments, care being taken to recover the alcohol. No satisfactory substitute for glycerin was found. American petrolatum was substituted by a jelly distilled from petroleum stiffened with ozokerit. Synthetic rubber was employed in small quantity, but its cost was very high. Rubber recovered from worn out articles and worked over again was not found satisfactory because it was not found sufficiently elastic, but was used for operating gloves with one half pure rubber or synthetic rubber. Rubber drainage tubes were replaced largely by glass and regenerated rubber. Rubber bulbs for nasal and dental work were satisfactorily replaced by bellows-like apparatus. Rubber bands were replaced by spiral springs. Vulcanite dental plates were replaced by aluminum. Steel for instruments degenerated and the nickel plating was thinner and wore off sooner. It was replaced by cobalt, which was worse, wore off sooner and blackened on boiling. Bandage material was replaced by wood fiber, paper, nettle fiber, etc. Wood fiber bandage is strong if dry, but can be sterilized only in steam and tears easily when wet.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

California: Los Angeles, March 17-20. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

Colorado: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Idaho: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

Iowa: Iowa City, March 24-26. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Minnesota: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Montana: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

New Mexico: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

Oklahoma: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

Rhode Island: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

Utah: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Florida December Examination

Dr. W. M. Rowlett, secretary of the Florida Board of Medical Examiners, reports the written examination held at Miami, Dec. 2-3, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined, 11 passed and 4 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Georgia	(1912)	75
Rush Medical College	(1900)	84.3
Louisville Medical College	(1879)	82.5
University of Louisville	(1898)	86.8
University of Maryland	(1902) 88.3; (1918)	81.3
Kansas City Medical College	(1888)	75
St. Louis Medical College	(1889)	83.4
Albany Medical College	(1904)	83.1
Jefferson Medical College	(1889)	85.5
Tennessee Medical College	(1900)	87.5
FAILED		
University of Arkansas	(1907)	67.1
Kentucky School of Medicine of Louisville	(1894)	67.8
Meharry Medical College	(1917)	65.5
University of Havana	(1896)	72

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Jan. 7, 1919. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 8 candidates who took the physician's and surgeon's examination, 4, including 1 osteopath, passed, and 4 osteopaths failed. Twenty candidates were licensed on credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago Hospital College of Medicine	(1918)	88.2
University Medical College of K. C.	(1903)	81
University of Toronto	(1911)	75.3

College	Year Grad.	No. Licensed
LICENSED ON CREDENTIALS		
Chicago College of Medicine and Surgery	(1910)	1
Rush Medical College	(1902)	1
Kansas Medical College	(1897)	1
Hospital College of Medicine	(1906)	1
Kentucky School of Medicine of Louisville	(1893)	1
Tulane University	(1897)	1
University of Maryland	(1903)	1
Harvard University	(1895) (1918)	2
Marion-Sims College of Medicine	(1893)	1
St. Louis College of Physicians and Surgeons	(1909)	1
University Medical College of K. C.	(1906)	1
John A. Creighton Medical College	(1917)	1
University of Nebraska	(1904)	1
Columbia University	(1903)	1
Medical College of Ohio	(1896)	1
Starling Medical College	(1896)	1
Medical College of the State of S. C.	(1913)	1
Baylor University	(1912)	1
McGill University	(1890)	1

Book Notices

The Autonomic Functions and the Personality. By Dr. Edward J. Kempf, Clinical Psychiatrist, Saint Elizabeth's Hospital, Washington. Nervous and Mental Disease Monograph Series No. 28. Paper. Price, $2. Pp. 156. New York: Nervous and Mental Disease Publishing Company, 1918.

The author states that this is an endeavor to substitute a "dynamic mechanism that can be visualized by the student" for the *libido* of Freud and Jung. One is tempted to believe that it is an attempt by a freudian to shield the *libido,* in which he believes, from the obloquy of numerous critics and skeptics, by putting on it an organic dress as yet sufficiently new and vague to be quite inoffensive. Whether or not he succeeds is for the reader to decide. As the title indicates, the monograph is an essay on the relations of the autonomic nervous system to psychic processes and personality. But it is more—or less. The thesis sustained is that "the autonomic apparatus dominates the organism and that the affections have their origin in the peripheral functions of this apparatus." The argument is divided into three steps: Part I tries to show that since the process of atrophy of disuse tends to eliminate useless material and movements, and that growth of the useful tends to make permanent necessary material and movements, the architecture of an animal should reveal in a general but reliable manner the fundamental law or process that determined the peculiar form of its existence. Part II is devoted to a consideration of such physiologic data as are suited to demonstrate the dominant nature of the autonomic apparatus. The interpretation of (1) the continuity of postural tonus of the striped muscles as the source of a continuous kinesthetic stream, and of (2) the unstriped muscles as the source of a continuous affective stream, is based principally on the physiologic researches of Sherrington and Langelaan, and on introspective observations of spontaneous reactions. Part III is the primary effort of the monograph, namely, an attempt to obtain recognition for the "fact" that in the higher organisms an affective sensorimotor system (autonomic) exists which created and uses the cerebrospinal or projicient sensorimotor system as a means to keep in contact with the environment in order that the autonomic apparatus may fulfil its biologic career. The monograph is well written, with sincerity, not to say enthusiasm, and contains some admirable information with much ingenious speculation. Undoubtedly it will be of interest to those occupied with the subject it covers.

Glaucoma: A Textbook for the Student of Ophthalmology. By Robert Henry Elliot, M.D., B.S., Sc.D. Cloth. Price, $7.50. Pp. 546, with 158 illustrations. New York: Paul B. Hoeber, 1918.

It is safe to say that there has been more advance in the diagnosis and treatment of glaucoma in the past ten or twelve years than in any similar period since the introduction of miotics. A textbook by one who has had much to do with this advance, giving in an able manner a review, summary and critique, is most welcome at this time. Special attention is given to Arthur Thompson's theory of the passage of the aqueous fluid from the anterior chamber into the canals of Schlemm by means of the "suction-pump" action of the pectinate ligament, in which it and the scleral spur are first pulled backward and toward the axis of the eye by contraction of the ciliary muscle, and then moved outward and forward as it is relaxed. In the chapter on etiology, much emphasis is placed on matters pertaining to the dimensions of the eye and the growth of the lens throughout life, as developed by Priestly Smith, and on heredity. Arteriosclerosis is discredited as a cause. The importance of the tonometer as a means of diagnosing is fully recognized by the author, but he lays even more stress on its constant use as a means of prognosis. The last third of the book is devoted to treatment, medical and surgical. The author is opposed to the use of miotics in general and pleads for early operation, quoting de Wecker: "If miotics have never cured a case of glaucoma, they have prevented many glaucoma patients from being cured." De Wecker, too, is credited with having been the first to appreciate the important rôle of the filtering cicatrix in iridectomy cases. The older masters, including von Graefe and de Wecker, were largely dependent on iridectomy, yet their writings do not make out a strong case for it. Naturally Elliot gives a careful description of his own corneoscleral trephine procedure, with its special feature of splitting the cornea from 0.5 to 2 mm. toward the center of the cornea to avoid cutting through any iris root adhesions, etc. But he also gives ample place to the operations of Lagrange, Herbert, Holth and Fergus. Among complications, Elliot gives a good deal of attention to "quiet" iritis. He has had no cases of "late infection," and thinks they may be avoided by thick-based flaps. So much concerning glaucoma is still unsettled that every one is entitled to his own opinion; but the author scarcely gives enough consideration to certain views manifestly opposed to his own. For instance, Jaeger and Schweigger, as well as Schnabel, and of late years von Hippel, have held that there is in glaucoma a "genuine atrophy" of the optic nerve independent of tension; yet of these authorities only Schnabel is quoted. He apparently feels that this situation is met by the statement that the atrophy which continues in some cases after normal tension has been restored is due to some "toxic or other influence." But this explanation is so inadequate as almost to beg the question. So far as we are aware, glaucoma alone, and no other disease, is known to have been present in these cases. Posey's valuable contribution on the use of miotics is not mentioned. Many will be unable to dismiss the bogey of "late infection" after trephining as easily as Elliot does.

By far the most interesting part of the book is the author's extended presentation of the newer intensive studies of the central fields of vision, Bjerrum's arcuate scotoma, going from the blind spot toward the fixation point, Roenne's nasal step, Seidl's sign, etc. He gives an ample discussion of the various theories of the origin and technic of taking such fields, including a description of a special scotometer of his own, and in general he emphasizes once more the wide and growing diagnostic and prognostic significance of these matters.

Paper Work of the Medical Department of the United States Army: A Guide for Administrative Work. By Ralph W. Webster, M.D., Ph.D., Major, Medical Corps, U. S. Army, Instructor, Basic Military Course, Camp Greenleaf. Approved for Publication by Direction of the Surgeon-General of the U. S. Army. Cloth. Price, $5. Pp. 541. Philadelphia: P. Blakiston's Son & Co., 1918.

In this book Dr. Webster has brought together, for the use of medical officers, the most important papers with which they are confronted while attached to organizations in the United States Army. The book is addressed particularly to reserve officers, to whom such a book no doubt would have been of great service had they continued to serve with troops during the recent war. The volume is replete with facsimiles of forms correctly filled out and with numerous suggestions as to the saving of time and trouble in taking care of these forms to prevent their being returned by headquarters for revision or modification. Had the war continued, this book would have ranked as a medical military "best seller"; as it is, it will be extremely useful to those medical officers taking part in the demobilization of the troops.

Clinical Microscopy and Chemistry. By F. A. McJunkin, M.A., M.D., Professor of Pathology in the Marquette University School of Medicine. Cloth. Price, $3.50. Pp. 470, with 131 illustrations. Philadelphia: W. B. Saunders Company, 1919.

The subjects indicated by the title of this book are presented from the laboratory standpoint, clinical descriptions and discussions being left out; hence much of the volume deals with laboratory technic, though the relations of examined materials to the tissues of the body are kept well before the mind of the reader. More than microscopy and chemistry is dealt with, however, the book possessing especially a comprehensive chapter on necropsy technic. The inclusion of small details of technic in the descriptions of laboratory procedures, useful details sometimes omitted from textbooks, and the clearness of the illustrations of apparatus, enhance the value of this volume for instruction of classes and for use as a reference book for routine laboratory technic.

Medicolegal

Treatment of Hemorrhoids by Injection—Pain and Negligence

(Thomas v. Register (S. C.), 96 S. E. R. 517)

The Supreme Court of South Carolina reverses a judgment obtained by the plaintiff, with direction to enter a nonsuit for the defendant, in this action against a physician for an alleged tort or wrongful act to the person, for which a verdict was returned in favor of the plaintiff for both actual and punitive damages. The court says that the alleged tort arose out of the treatment of the plaintiff by the defendant for hemorrhoids. The charge was that the treatment was both negligent and wilful. But the court finds no room to find from the testimony that the defendant was either negligent or wilful in what he did. The only negligent act suggested by the plaintiff's counsel at the bar was the persistent treatment of the patient, notwithstanding the pain that the treatment gave the patient. No testimony was offered that hemorrhoids could be treated without pain. Negligence is not a reasonable inference from the bare fact that pain accompanied the treatment.

There was no testimony tending to prove that the compound injected, or that the instrument used for the injection, was unfit. On the other hand, one of the plaintiff's expert witnesses testified that he "had heard of treatment by injection, and that some reputable physicians use the same now." Moreover, counsel was unable to suggest at the bar any act or any utterance of the defendant that pointed to his wilfulness, and the testimony showed none such. The trial court ought to have directed a nonsuit, and must yet do so.

The trial court excluded all testimony tending to show specific instances in which other persons had been benefited by the treatment that was administered to the plaintiff. The complaint alleged that "the defendant is commonly called and designated as a 'quack and an impostor,' and that he is unskilled and unlearned in his profession, and was and is wholly incapable of relieving or curing piles in and by the manner of treatment which he applied to the plaintiff, and that the defendant well knew such fact." The issue, then, that the plaintiff tendered by his pleading was that the remedy was specious, and the defendant knew the fact. If it be true that the defendant applied the same remedy to others than the plaintiff, which others had a like affliction, and with helpful results, that would tend to disprove the plaintiff's allegation. The testimony was competent.

Effect on Appeal of Death of Physician Enjoined from Local Practice

(Branscome v. Cunduff (Va.), 96 S. E. R. 770)

The Supreme Court of Appeals of Virginia, in dismissing the appeal of defendant Branscome, without a decision on the merits of the case and without costs of either party, on account of his death, says that the defendant, a practicing physician, sold and conveyed his home to the plaintiff, residing and practicing in the same town. The deed expressed a money consideration of $2,250, and contained a provision that for the same consideration the defendant agreed not to locate again within the radius of 15 miles of the town, as a practicing physician. The defendant moved away, but returned within a year from the date of the deed, took up his residence near the town, and resumed the practice of his profession. The plaintiff thereupon brought this suit for an injunction. The result was a decree of the lower court whereby the defendant was perpetually enjoined from practicing medicine and exercising his profession as a practicing physician within a radius of 15 miles from the town. From that decree this appeal was allowed. But after the cause was argued and submitted in the supreme court of appeals, the defendant died. It was insisted by counsel for the appellant that in this particular case the controversy ought to be decided, in order to settle the question of costs, the amount of which was said to be considerable. But the issue on which the cause came to this court had by the death of the defendant become a purely moot question, and nothing remained for the court to do, except to enter an order dismissing the case without costs to either party. This is the settled practice in Virginia and elsewhere generally.

Purpose for Which Roentgenograms May Be Used

(Russell v. Borden's Condensed Milk Co. of Utah (Utah), 174 Pac. R. 633)

The Supreme Court of Utah says that in this personal injury case it was contended that the trial court erred in admitting in evidence certain roentgenograms showing the condition of the plaintiff's hip and hip joint. It was insisted that the roentgenograms had a tendency to mislead the jurors, who were merely laymen and thus possessed no knowledge respecting the injuries to the bone or to the hip or hip joint. If the roentgenograms had been introduced for the purpose indicated by counsel, there would be much force to their contention. A jury of laymen possessing no knowledge or experience respecting the bones and injuries thereto might easily be misled by a mere roentgenogram, by which at the best merely the outline of the bone can be shown. The roentgenograms, however, were not introduced for the purpose indicated by counsel. They were used by the physicians in illustrating their evidence, and were fully explained, and were introduced in evidence only as affording a fuller and clearer understanding by the jury of the physicians' testimony respecting the condition of the plaintiff's injured hip and hip joint. The court committed no error in receiving the roentgenograms for the purpose for which they were received and used.

What the Law Requires of a Physician

(Hesler v. California Hospital Co. et al. (Calif.), 174 Pac. R. 654)

The Supreme Court of California, in reversing a judgment for $2,500 damages that was obtained against the hospital company and the physician it assigned to the case, for alleged malpractice in the treatment of a cold that developed into pulmonary tuberculosis, says that the jury was given, among other instructions, the following:

> 5. To sustain an action it is not necessary to establish gross culpability; mere evidence of want of proper or ordinary care or attention and advice in the discharge of duty by a physician is sufficient to take the case to the jury. 6. Civil malpractice may be either active or passive. It is active when a certain course of treatment is adopted and followed which is not sustained by authorities; it is passive when those things in treatment are omitted which should have been done in order to obtain a result approximating to perfectness. 9. As a general rule, he who undertakes for a reward to perform any work is bound to use a degree of diligence. attention and skill adequate to the performance of his undertaking; that is, to do it according to the rules of the art. 10. The physician must give proper instructions to his patient how to take care of himself, and what diet to adopt; and in case the physician fails to give these instructions he is liable for any injury that results from such failure.

Instruction 5 is to the effect that a physician is liable in damages if he fails to give "proper" advice to his patient. Instruction 10 reiterates this doctrine. Instruction 6 gives the jury to understand that a physician is guilty of malpractice, and liable in damages, if, in treating a patient, he fails to do anything necessary to obtain an approximately perfect result. The law does not require that the instructions and advice given by a physician to a patient should be at all events and beyond question "proper," or that his treatment should be certainly such as to obtain an approximately perfect result. It requires only, first, that he shall have the degree of learning and skill ordinarily possessed by physicians of good standing practicing in that locality; and, second, that he shall exercise reasonable and ordinary care and diligence in treating the patient and in applying such learning and skill to the case. The law takes cognizance of human weakness and liability to err in the application of skill and learning, and it requires only the exercise of reasonable and ordinary care and diligence to avoid error. These instructions require more: they require that the advice given shall be "proper," which implies that no error shall be committed; they require that the physician shall do everything necessary to be done to produce an approximately perfect result; that he guarantees that his treatment shall be of that quality; whereas, the law demands only that he use reasonable care to attain such approximate perfection. Instruction 9 declares that the physician is bound to use, and of course to have, a degree of skill "adequate" to the performance of his undertaking. The law requires that he have the degree of skill ordinarily possessed by reputable physicians practicing in that locality. This may or may not be "adequate" to the performance of his undertaking, according to the meaning to be given to the word "undertaking." If it was intended to mean that he undertakes a cure, or to produce a result approximating perfection, as stated in Instruction 6, or that he undertakes to use the highest possible degree of skill, the standard is higher than the law requires. The instruction is uncertain on this point, and it may have misled the jury.

The court below in other instructions (not given in the opinion) stated the rule by which the defendants were bound accurately and clearly. There was a clear conflict in the instructions. The supreme court is unable to determine which set of rules the jury followed. The case of the plaintiff on the merits, at best, was not strong. The court cannot say that these instructions were not injurious to the defendant, and did not improperly control the deliberations of the jury in rendering a verdict.

Society Proceedings

FIFTEENTH ANNUAL CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago, March 3, 1919

Dr. John M. Dodson, Chicago, in the Chair

Problems in Medical Education

Dr. John M. Dodson, Chicago: By means of the effective organization of the American Medical Association, the medical profession of the United States was able to render a magnificent response to the call of the nation for medical officers in the world war, now happily suspended, and its closing chapters being written by the peace congress sitting in Paris.

We ought to be engaged now in the collection of all the necessary data for the coming historian of this epoch. The officers and faculty of every medical school owe to themselves, to their students and alumni, to the medical profession, and to posterity to see that there is gathered and carefully recorded at once, while the events are fresh in mind, all the essential facts pertaining to the participation of the school in the war.

To meet the possible demand for many thousands of medical officers, it seemed necessary to expedite the matriculation and graduation in medicine of as many students as possible. At the request of the Surgeon-General, the time requirement for admission to medical schools was reduced from two years to one and one-third years. Is there any reason why this lower standard should be continued, now that the exigency created by the war no longer exists? The two years' requirement seemed all too short, and that now is the legal requirement for licensure in thirty-two states.

The continuous session, on the four quarter plan, has been in effect for nearly twenty years in at least one medical school, though it had been impossible for a student to complete the legal requirement of attendance in less than forty-two months, because of the regulations of some of the state boards of medical examiners. Is there any logical reason why the student should not be allowed to utilize the summer months in full-time medical work in residence, and thus complete the present requirement of four sessions in three calendar years, his year of internship in a fourth year, and so enter into active practice a year earlier than has been possible under previous regulations? The ruling of the state boards that "twelve months shall intervene between the beginning of any recognized session and the one succeeding it," or that "no two sessions shall begin in the same twelve months" (the restriction has been variously worded), was first promulgated many years ago, under conditions and to meet abuses that no longer exist. Under the four quarter scheme, seven weeks may be provided for vacations, so that attendance on the four quarters is no hardship for the student in good health who desires to avail himself of the privilege.

If approval of the plan is desirable, the state boards should revise their rulings or have the laws amended, if necessary.

Opinions may differ as to the amount of special training that may be indispensable to efficient service in the Medical Corps of the Army, but all will agree that a certain minimal degree of such training is essential, and no future war ought to find the medical profession so unprepared for military service as we were for this war. Moreover, the discipline and training essential to prompt and effective organization and operation of large groups of medical men, such as may be called for in a great earthquake, flood, fire or other great catastrophe, can be secured most effectively by military methods.

The scheme of organizing groups of physicians representing several special lines of practice has been growing steadily in this country for several years. To a degree never before approached in army medical practice, the several specialties were recognized in the medical corps of our army in this war. In the post and base hospitals, both at home and abroad, the medical work was performed by a carefully selected group of specialists, provided with ample facilities and appliances of all sorts for thorough work in diagnosis and treatment. What a source of consolation and confidence this was to those who had sons in the service, liable to be in need at any moment of the most skilled medical attention. The thousands of American physicians who were engaged in these hospitals, and who experienced the profound comfort and satisfaction of thorough, accurate, scientific work, possible only in such groups of consulting specialists, are little likely to return with equanimity to their former custom of attempting individually to cover the whole field of medicine.

Two questions are suggested by these facts: First, should our scheme of medical education be altered so as to encourage and provide for the education of our undergraduates directly for a special line of practice—internal medicine, surgery or ophthalmology, etc.—or should we continue to insist that every student of medicine should first secure a reasonably broad, comprehensive knowledge of general medicine, turning his attention to some exclusive line only when he has had considerable practical experience—at least a year or two of hospital training—in the general field? Second, ought not the public to demand of any physician who presents himself to the community as a "specialist" in any particular field, that is, as one possessed of special, superior knowledge, experience and skill, some proof of such ability as would be given by a license to practice ophthalmology, surgery or what not, issued by a board of competent examiners?

Another phase of medicine that has been brought into great prominence by the experiences of the war is preventive medicine, which has demonstrated its great possibilities as contrasted with curative medicine. For the first time in the history of warfare, with the exception of the Japanese-Russian War, deaths of soldiers from disease have been less than those from the casualties of combat. Had it not been for the sudden onslaught of the most fatal pandemic in modern times, the mortality from disease would have been almost unbelievably low. And this was made possible by the thorough, painstaking enforcement of the hygienic and sanitary methods of modern preventive medicine, which proved effective even under the difficult and distressing conditions of trench warfare. Never has the time-worn adage been more strikingly illustrated that "an ounce of prevention is worth a pound"—aye, many pounds—"of cure."

In five states a year of hospital training is a prerequisite for licensure, and three other states are soon to demand the same preparation; six medical schools now graduate students only after the successful completion of such a fifth year, and two others are soon to do likewise. The very rapid increase in the number of hospitals in the United States has insured a place for every medical graduate. On the other hand, the conditions of intern service in these hospitals are widely divergent, and in very few of them ideal. The hospital internship, like the so-called training schools for nurses, is still in many hospitals merely a mean device for securing cheap help. In the interests of the patients, the students, the medical attendants and the community at large, one of the greatest needs of our time is for a better coordination of the hospitals and the medical schools.

This suggests many questions. Should this fifth year be primarily under the control of the licensing bodies—the boards of medical examiners—or of the men who are concerned with the education of the student—the faculties of the medical schools?

There seems little hope, all things considered, for universal reciprocity between the medical boards of our forty-eight states with their widely varying standards of examination. But some more sane and equitable method of insuring to every capable practitioner of medicine the right to practice anywhere in the Union, and to move without embarrassment at any time from one state to another, such as is furnished by the National Board of Medical Examiners, is an imperative need.

Recent Progress and Further Needs in Medical Education

Dr. N. P. Colwell, Chicago: There are now eighty-five medical colleges, of which eighty, or 94 per cent., require for admission two years of work in a college of arts and sciences, as compared with only 2.5 per cent. of all colleges holding to that requirement in 1904. And this requirement is not "on paper" only, since these colleges are voluntarily furnishing the Council with lists of the students admitted, together with statements regarding their preliminary qualifications, so that the Council can verify these qualifications, should question in regard to them arise.

Considering the character of the majority of medical schools prior to 1904, it is not so surprising that, according to reports, many of the physicians called into service may have been lacking in a knowledge of the specialties, and that some lacked a knowledge even of the fundamentals of medicine. Every one knows that there is still great room for improvements in teaching methods and in the thoroughness of instruction in our medical schools; but think how much greater would have been the deficiencies on the part of medical officers had it not been for the tremendous improvements in medical education and the many thousands of highly trained graduates who were turned into the medical profession during the last fifteen years.

Reports from seventy-three of the eighty-five colleges now holding sessions indicate that the total enrolment of medical students will be about 1,100 less than for the session of 1917-1918. The reduction is chiefly in the freshman classes. There were twenty-five medical schools which last fall for the first time exacted two years of collegiate work as the minimum requirement for admission, in which lower enrolments for the freshman classes would be expected. But the decrease was not due altogether to the higher entrance requirements, since, of the forty-eight colleges reporting which put into effect the higher requirements previous to 1918, thirty-nine report a decrease in the number of freshman students. The unusual decrease is largely due to the drafting or volunteering of premedical students during 1917-1918 for military service.

The total number of physicians in the United States, as shown by the sixth edition of the American Medical Directory, issued in 1918, is 147,812. The total population of the United States, according to the estimate of the Census Bureau for 1918, is 105,253,300. There is, therefore, one physician in the United States for every 712 people.

Two methods have thus far been devised for the continuous sessions in medical schools. One is the "quarter system," by which the year is divided into four terms of three months each, any three terms counting as a college year. The second plan is to divide the year into three terms of four months each, any two terms to count as a college year. The schools which have adopted the continuous session have so arranged their curriculums and provided the teachers that students who are physically able and who desire to do so may continue at their medical studies the year around. In their schools also, during any quarter, students may make up courses in which for any reason they have failed to complete without loss of an entire year. Delayed matriculation also will mean the loss of only one quarter instead of an entire year. The continuous plan also enables the institutions to care for a larger number of students, and it keeps an extensive teaching plant in continuous operation.

An improvement still greatly needed in medical schools is in the methods of clinical instruction of medical students. Students should be enabled to complete most of their didactic courses in the third year so that most, if not all, of the time in the fourth year may be devoted to clinical courses for groups of about six students each in the hospital wards. Each student should have a patient assigned to him, and under careful supervision should write the history, make the essential laboratory examinations, suggest the treatment and follow the progress of the case during the patient's stay in the hospital.

On the student's undergraduate clinical training depends the standard of clinical training which should be furnished in the intern year. The character of this training is best known to the medical college he attended and not to the state licensing boards. It is a desirable step for state licensing boards to require the completion of an internship in a hospital as an essential for the license; but the medical college is in the best position to select the hospitals in which its students should obtain their intern training and to supervise the work of the intern in such hospitals.

The Needs of Medical Education as Revealed by the War

Edward L. Munson, Brig.-Gen., M. C., U. S. Army: The nature of the conditions and ideas under which the old Medical Reserve Corps was organized had their influence on its medical standards and the medical examinations required for its enrolment. In general, it was composed of three classes: 1. The recognized leaders of the medical profession, who lent the weight of their well known names and great professional reputations to popularize the then new Reserve Corps; the abilities of these men were well known, and the examinations to which they were subjected were probably cursory. 2. A somewhat smaller class probably consisting of a personnel drawn from the average class of practitioner, such as constitutes the backbone of the medical profession of the country; here also the examinations required were none too rigid, but no professional difficulty later occurred as a result of any professional inefficiency on their part. 3. A not inconsiderable third class, composed of less well qualified men, some of whom enrolled for patriotic purposes and others perhaps by reason of the desire to possess a commission.

The medical officers who finally reached the medical training camps represented better than the average of the medical profession of the country, for these candidates had been subjected to several processes of *elimination*:

(*a*) They had to be invited to appear for examination by the Surgeon-General, and unless they appeared to be probably desirable, this invitation might not be forthcoming.

(*b*) They had to be graduates of reputable medical colleges, which ordinarily eliminated men coming from institutions of poor character.

(*c*) They had to be licensed to practice in the state in which they lived, which would exclude medical graduates who had been found later to be not thoroughly qualified.

(*d*) They had to be in the active practice of their profession, thereby excluding the failures in medical practice who were making their living by some other vocation.

(*e*) They had to pass an examination before a local board, which had to be satisfied with their professional, physical and moral qualifications. Here occurred the greater number of rejections, for the local board not only was in a position to test out qualifications by examination, but in many instances it knew the candidate personally or by reputation, and was well informed as to his antecedent activities and conduct.

(*f*) Before they were commissioned, the American Medical Association investigated and reported on their cases, to make sure that there was nothing in their career that should render undesirable their appointment as medical officers.

(*g*) Finally, the Surgeon-General had the right of rejection, which was exercised in the case of men who ultimately appeared from their papers to be not qualified for the service.

Thus a large proportion of the undesirables were excluded from service and never reached a medical training camp which dealt with an already selected class. That this selected class presented still further professional deficiencies invites reflection on the part of all those in charge of medical education.

The medical training camps acted as filters to determine and eliminate the unfit. Examining boards were appointed to examine all student officers, and to recommend for discharge all whom they found disqualified for service in any capacity.

For some time the recommendations of these boards were not fully accepted by the specialist divisions of the Surgeon-General's Office, which had card indexed the men whose reputations seemed to warrant their acceptance as specialists. So many were found to be overrated by their reputations that the specialist divisions finally agreed to make their appointments subject to the examination held by the examining boards at training camps. The number found not qualified was considerable. A few alleged specialists were even found unfit to practice any branch of medicine in the service. Others not qualifying were made available for general assignment. General reputation is not necessarily a criterion of qualification, and a large number of men, generally accepted as specialists, are not qualified as experts.

Another class was not qualified but was too good to be discarded summarily. Accordingly "salvage classes" were started, the members of which were systematically and intensely quizzed by expert quiz-masters. The men assigned to these salvage classes were bright and energetic enough, but for one reason or another had not kept up with medical progress. The subjects in which they were quizzed were only those in which they were found deficient. The reclamation course usually covered about three weeks, when the candidates were reexamined and nearly all qualified. The reclamation classes at Camp Greenleaf amounted to as much as 6 or 8 per cent. of the student officers' group.

The general professional qualifications of officers bore a close relation to the educational standards of the schools from which they graduated. But various instances were noted in which graduates of good schools made a poor professional showing. Medical schools should require a satisfactory psychologic rating for condidates for admission to a course leading to the degree of Doctor of Medicine, to make sure that they have the mental aptitude to qualify properly for it.

A very large proportion of alleged specialists were found to be only partly qualified. To render them properly qualified, special schools were organized which were staffed with the ablest professional specialists in the country. The courses were highly practical and intensive, and the student officers appreciated their great value.

I cannot forbear from expressing my admiration at the manner in which the profession in uniform adapted itself to conditions. Its members accepted cheerfully the results of the stock taking of their qualifications, even though the latter might not have been flattering, and cooperated in every way to remedy the defects thus made apparent. Their eyes were opened to any shortcomings of the profession as a whole, and it is safe to assume that their military experience has shaken them out of complacency, and given them new ideals and broader purposes. One of the results of the war will be a better and more competent medical profession, the members of which will look to the medical educators of the country to set high ideals and provide the facilities for their attainment.

The Medical Enlisted Reserve Corps and Its Relation to Medical Students

Frederick C. Waite, Capt., Sanitary Corps, U. S. Army: With the declaration of war there was an immediate stimulus to enlistment in the Medical Reserve Corps. While these enlistments were as reservists, they were in the majority of cases made with the expectation of an early call to active duty. These enlistments were made in large part in connection with the formation of units in the Medical Department. Under this plan fifty Red Cross and base hospital units were formed. The enlisted personnel of each of these units approximated 200 men. Some of these units constituted the first military forces to be sent overseas following the declaration of war, arriving in Europe several weeks in advance of the earliest Regular Army organizations.

The purpose of permitting medical, dental and veterinary students to enlist in the Medical Enlisted Reserve Corps, to be left on inactive status, was to enable them to complete their professional training in order that they might be available material for officers in the Medical Department of the Army.

The justification for inactive status, and the consequent delay in entrance on active military duty, was the greater service that would be later rendered to the Army as medical officers. It was a legitimate war preparedness measure to train soldiers to render a more highly specialized service, if the war should go on, than they could render if immediately drafted as ordinary soldiers. Previous to the announcement, Sept. 4, 1917, of the regulations permitting medical students to enlist in the Medical Enlisted Reserve Corps, however, a considerable number of medical students volunteered or were inducted into active service.

The plan of allowing graduates of well recognized medical schools to serve as interns in hospitals for one year had a double object. It aimed to develop better medical officers for Army service by this practical experience and to preserve the efficiency of the hospitals of the country for protection of the civilian community.

Such an intern after graduation either obtained a commission in the Medical Reserve Corps or enlisted as a private in the Medical Enlisted Reserve Corps. In either case he was placed by his local board in Class V, and exempted from the draft on the ground that he was already in the military service of the country.

The continuance of inactive status for the intern was conditioned on the performance of his duties in the hospital in a manner satisfactory both to the Surgeon-General and to the authorities of the hospital, which was established by reports from the hospital authorities.

This regulation necessitated a classification of the hospitals of the country. A questionnaire was sent out from the Surgeon-General's Office to those hospitals which, on information available from these sources, appeared to be eligible for approval as places in which to train interns for Army purposes.

The Desirability of Units of the Reserve Officers' Training Corps in Medical Schools

Horace D. Arnold, Lieut.-Col., M. C., U. S. Army: The object of the Student Army Training Corps was to educate and train a body of intelligent men in preparation for positions as commissioned officers in the Army. The Committee on Education and Special Training feels that the S. A. T. C. did not have a fair chance in collegiate institutions, owing to a number of conditions beyond control. The success of its vocational sections, when time enough had elapsed for the proper development of methods, was unquestioned. Yet it is true that if this work had been stopped at the end of a month or six weeks, the story would have been one of confusion and lack of adjustment, almost equal to that of the S. A. T. C. in medical schools. The Army is convinced that the introduction of the regular military life into a professional school, with a curriculum as crowded and complicated as that in medicine, is not practicable. Should the occasion ever arise again which would require medical students to be soldiers in service, while still continuing the study of medicine, I think you may count on the least practicable interference with the medical course.

In order to make this plan effective, physicians should have, in addition to the qualifications for civilian practice, at least the following qualifications: (1) a knowledge of military hygiene and sanitation; (2) a sufficient knowledge of Army organization and methods to enable them to procure supplies and to carry on the administrative functions of their positions; (3) a sufficient military training to enable them to command the soldiers of the Medical Department under their charge.

These requirements can best be met through training in units of the Reserve Officers' Training Corps established in medical schools, and in summer training camps. Owing to the crowded curriculum of the medical schools, such a plan of military training must be so arranged as not to interfere seriously with the regular course of study in medicine. In the contemplated plan, military drill will be given at the summer camps; the number of strictly military courses will be reduced to a minimum; and the necessary theoretical training for medical officers will be sought, as far as practicable, in the adaptation of the existing courses of the medical school to military needs. Physical training to the extent of two hours a week for the freshman and sophomore years of the medical course will be required of members of the R. O. T. C., but it is felt that this will be of such definite personal advantage to medical students that it might well be adopted by the school as a requirement for all students. In no way does the medical school ignore its own teaching more than in its usually complete neglect of provisions for the physical health of its students. The normal R. O. T. C. course is divided into a basic course, covering two collegiate years and one summer camp, and an advanced course, covering two collegiate years and two summer camps. The basic course should be taken, if possible, before the student enters the medical school; and an opportunity to do this is offered while he is taking the two years of the required premedical course, provided the college maintains an R. O. T. C. unit. The basic training in infantry or in any other arm of the service will be acceptable. Military drill during the academic year is not essential, as a sufficient amount of this may be obtained in the summer camp, which the student should attend during the vacation following his freshman or sophomore year.

The advanced course will be offered at the medical school. The physical training and the required courses in strictly military subjects will be given during the first two years of the medical course, and the two summer camps devoted to the military training of the Medical Department will come during the vacations following the freshmen and sophomore years. In this way the last two clinical years of the medical course will be left essentially free from interference from the military training, the only courses necessarily given during these years being the relatively short theoretical courses in military surgery and military medicine.

It is the intention of the committee to have the members of the R. O. T. C. unit, during the period of the summer camp following the sophomore year of the medical course, assigned to duty in Army hospitals. They will thus learn not only the military duties of officers and enlisted men in these organizations, but will get practical experience in nursing and the care of the sick that will be equally valuable for civilian practice.

The requirements for graduation from the R. O. T. C. are: (1) the completion of the basic course of the senior division, R. O. T. C., or its equivalent; (2) the completion of the advanced course, R. O. T. C., and (3) attendance at three summer camps. On graduation from the medical school and from the R. O. T. C., and on recommendation of the professor of military medicine, and provided he is at least 21 years of age and he agrees under oath and in writing to serve the United States as reserve officer for at least ten years from date of appointment, unless sooner discharged by proper authority, the student may receive a commission in the Medical Reserve Corps. *(To be continued)*

Japanese Red Cross.—The Red Cross organization in Japan had its beginning about 1889. Five years later there was a membership of 160,000 and a fund of about $2,000,000. As a result of the war with China the membership in 1898 had increased to 570,000 and the annual income was approximately $800,000. At present, according to the Red Cross *Bulletin*, the Japanese organization has more than a million and a half of members, each of whom has enrolled for ten years, and pays into the organization at least $1.50. The headquarters of the organization in Tokyo is housed in a splendid modern building.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

February, 1919, **157**, No. 2

*Cutaneous Aspects of Tuberculosis. "Tuberculous" Purpura, Erythema Multiforme and Erythema Nodosum. J. H. Stokes, Rochester, Minn. —p. 157.

*Acute Pulmonary Emphysema During Epidemic of Influenzal Pneumonia at Camp Hancock, Ga. R. G. Torrey, Philadelphia, and L. C. Grosh, Toledo.—p. 170.

*Case of Primary Carcinoma of Third Portion of Duodenum. G. D. Head, Minneapolis.—p. 182.

*Examination and Treatment of Soldiers Infected with Hookworm at Camp Beauregard, La. D. J. Frick, M. C., U. S. A.—p. 189.

*Granular Tuberculous Conjunctivitis Treated By Instillations of Tuberculin. R. C. Paterson, Saranac Lake, N. Y.—p. 198.

*Study of an Unusual Glycosuria. L. Langstroth, San Francisco. —p. 201.

*Graham-Steel Murmur in Mitral Stenosis. E. H. Goodman, Camp Jackson, S. C.—p. 206.

Use of Binocular Loupe for Examination of Functional Troubles of Pupil. E. Berger, Belgium.—p. 208.

Epidemic Cerebrospinal Meningitis at Camp Beauregard, La. A. A. Landry, Plaquemine, La., and W. H. Hamley, Lake Providence, La. —p. 210.

*Influenza Pneumonia Cases Showing Gas in Fascial Tissues. E. Clark, Chicago, and M. J. Synnott, Montclair, N. J.—p. 219.

*Renal Diabetes. C. V. Bailey, New York City.—p. 221.

*Multiple Endothelioma of Skin. F. Wise, New York City.—p. 237.

*Clinical Results in Two Hundred Transfusions of Citrated Blood. R. Lewisohn, New York.—p. 253.

Pathologic Changes of Brain in 162 Cases of Paresis. T. B. Christian, Norristown, Pa.—p. 271.

Cutaneous Aspects of Tuberculosis.—A careful study of ten cases made by Stokes leads to the conclusion that while it is impossible at the present time to dogmatize on the existence of a tuberculous type of purpura, erythema multiforme or erythema nodosum, clinical and experimental evidence is collecting to show a close association between a tuberculous infection and cutaneous syndromes of the type mentioned. Whether the lesions themselves are due to the tubercle bacillus, whether or not their appearance signalizes a flare-up in the tuberculous focus, cannot as yet be definitely stated. It is possible that a nontuberculous infection which produces erythema complex may uncover the tuberculous focus, much as measles is known to do, and permit a lighting up of a lesion otherwise quiescent. Stokes believes that the purpuric erythematous and nodose lesions are cutaneous reactions to hematogenously distributed bacilli, deposited in a hypersensitive skin and originating in a tuberculous focus sometimes unrecognized perhaps for many years. Whether the tuberculous phase is the cause or the consequence, the frequent clinical association of the cutaneous symptoms with this disease loses none of its importance from the standpoint of diagnosis and therapy. Stokes urges that every case of purpura, and many cases of erythema multiforme, should be subjected to a preliminary survey for the possibility of tuberculous infection. Cases of erythema nodosum, whatever their type, should be subjected to periodic reexamination and observation. In the absence of a demonstrable source of pyogenic infection, and even in its presence, the possibility of tuberculous etiology should be entertained seriously and an antituberculosis hygiene considered.

Acute Bronchitic Emphysema in Influenzal Pneumonia.—Observation of 1,150 soldiers with epidemic influenza pneumonia at Camp Hancock has indicated that the disease as it occurred there differed so essentially in its pathology and course from lobar, bronchopneumonia or lobular pneumonia, according to the usual conception of these diseases, that Torrey and Grosh designated the condition as acute bronchitic emphysema. Certain conditions were invariably present, including an intense bronchitis and peribronchitis similar to that found in a previous epidemic of pure hemolytic streptococcus infection. There was also present from the first a destructive softening of the lung parenchyma. In addition to this there was always an early and persisting generalized pulmonary emphysema which frequently was the main factor in causing death by interference with the mass movement of the venous blood. These conditions were found in every case examined at necropsy. Except for frequent acute otitis media there were almost no complications or sequelae outside of the chest. The pulmonary emphysema, with consequent venous stasis, accounted for the cyanosis, epistaxis and fixation of the chest in the phase of extreme inspiration, with low stand of the diaphragm, which characterized these cases, and also accounted for the paradoxical physical signs in cases in which fluid developed in the chest.

Primary Carcinoma of Duodenum.—Head reports the case of a man, 74 years of age, well nourished, looking very anemic, who for seven or eight years had complained of ill-defined gastric symptoms, exhibiting at times periodic attacks of vomiting of large quantities of greenish material, with partially digested blood, whose physical examination revealed a high grade secondary anemia, without assignable cause, except the presence of blood in the vomit and in the stools. He also presented a hyperacid gastric content. No palpable mass was in evidence. He died with the symptoms of obstructive vomiting—namely, either a carcinoma high in the intestinal tract, below the stomach, or a duodenal ulcer with a carcinoma superimposed, causing obstruction by occlusion of the bowel.

The diagnosis of the case prior to necropsy was a duodenal ulcer, with carcinoma superimposed, producing a slow developing occlusion of the intestine not far from the pyloric opening. Necropsy disclosed a resistant mass at the lower curve of the duodenum and extending over into the third portion. The lumen was almost completely occluded by a cauliflower-like mass growing from the median and posterior wall. Microscopic examination of the tumor showed a typical adenocarcinoma of the papillary type. Infiltration extended deep into the muscular layer of the duodenum on its inner aspect. No gross or microscopic lesions in the suprarenals, liver, pancreas or lymph nodes around the celiac axis were in evidence.

Soldiers Infected with Hookworm.—The percentage of positive cases for all white troops examined by Frick was 11.5 per cent.; the percentage of positive cases in the colored troops was 1.1 per cent. The three principal states gave the following figures: Louisiana, 898 cases; Mississippi, 454 cases; Arkansas, 243 cases; from all other states, 126 cases. Hookworm apparently has no marked effect on the health of the great majority of these men. This may be due to the mildness of the infection or the fit condition of the men through training. A routine was followed from the beginning and carried through without variation.

The soldiers were sent to the base hospital in groups of twenty to 135, usually after the noon meal. Early in the afternoon they were given a dose of salts; at 5 p. m. a thin broth; at 6:30 p. m. more salts. The next morning at 6 a. m. a third dose of salts. At 8 a. m. and 10 a. m., 1 c.c. of oil of chenopodium. This was followed an hour later by an ounce of castor oil in orange juice. In the middle of the afternoon they were given some liquid nourishment and at 5 p. m. a full meal. The next morning, after breakfast, they were returned to their companies. The oil of chenopodium was poured into capsules or given on sugar.

Granular Tuberculous Conjunctivitis.—In the case cited by Paterson 2 drops of 1 per cent. solution of O. T. was instilled into the conjunctival sac and almost immediately a dilation of the conjunctival vessels could be seen and a sharp reaction followed. This treatment was continued for six doses, at about ten-day intervals, making in all eight treatments, with reactions, after which the conjunctiva showed little evidence of the disease. All symptoms had entirely disappeared, the only evidence of previous disease being a few fine granulations and slight reddening of the bulbar conjunctiva at the extreme inner canthus. The palpebral conjunctiva was clear, but there seemed to be some thickening, as the palpebral slit was slightly narrower than that of the opposite eye and the patient was not able to open the affected eye quite as widely as the right. The lung condition and throat disease were quiescent during the treatment and have not since been affected by the reactions. The patient is now doing light office work for the first time in two years.

Study of an Unusual Glycosuria.—A case of glycosuria with apparently lowered renal threshold for glucose is reported by Langstroth. There were no other symptoms of diabetes. There was evidence of abnormal carbohydrate metabolism.

Graham-Steel Murmur in Mitral Stenosis.—Thirty-six cases of mitral stenosis were studied by Goodman. These cases were definitely mitral stenosis and not aortic insufficiency, with a Flint murmur. Of the thirty-six cases, twenty-four were pure mitral stenosis, i. e., with no insufficiency, and twelve were associated with a definite systolic murmur of an insufficiency. In the thirty-six cases a diastolic murmur along the left border of the sternum was heard twelve times, or in 33.3 per cent. of the cases. In the twenty-four cases of pure stenosis it was heard nine times, or 37.5 per cent., and in the twelve cases of stenosis with insufficiency it was heard three times, or 25 per cent. It would seem, therefore, that the Graham-Steel murmur is heard rather more frequently in the pure cases than in those associated with insufficiency.

Influenza-Pneumonia Showing Gas in Fascial Tissues.—Twelve cases of this kind are reported by Clark and Synnott. Three cases ran an uneventful course and recovered without surgical procedure. At necropsy the gas-containing tissue showed little blood in the vessels. It presented no discoloration, no congestion, no induration or other signs of inflammation. Bacteria were not recovered. Gas was not found within the muscle sheaths. The distribution of the gas corresponds with what we would expect to be the dissemination of gas escaping from the weakened alveoli of the lung under pressure. The authors are of the opinion that the "gas" in the above cases of pneumonia is air from the lung which reaches its distribution as a result of purely mechanical factors. They do not believe the gas is of bacterial origin.

Renal Diabetes.—Bailey reports two cases. He believes that renal diabetes, or better, "renal glycuresis," should be considered broadly as a condition of glycuresis not dependent on a temporary increase of blood sugar in an individual free from symptoms of diabetes mellitus. The condition can be recognized by morning synchronous blood and urine sugar tests, the specimens being collected before the patient has had anything to eat or drink. At least two types can be recognized: (1) cases with normal or subnormal blood sugar and glycuresis, which is greatly influenced by blood sugar changes; (2) cases with a constant glycuresis which varies with the rate of urinary excretion and is little influenced by blood sugar changes.

Multiple Endothelioma of Skin.—The type of endothelial new growth seen by Wise in two cases is very rare. Clinically, tumors of endothelial origin may be indistinguishable from the efflorescences of urticaria pigmentosa, xanthoma, soft moles, syringocystadenoma, multiple benign cystic epithelioma and perhaps other dermatoses. The study of sections occasionally reveals new growths of endothelial origin.

Transfusions of Citrated Blood.—The 200 transfusions of citrated blood made by Lewisohn were done for the following reasons: (*a*) hemophilia and allied conditions, 14 cases, 15 transfusions; 11 cures, 3 deaths; (*b*) purpura hemorrhagica, 16 cases, 20 transfusions; 4 cures, 5 improved, 2 results unknown, 5 deaths; (*c*) gastro-intestinal hemorrhage, 11 cases, 20 transfusions; 2 cures, 1 improved, 8 deaths; (*d*) cholemia, 5 cases, 11 transfusions; 5 deaths; (*e*) postoperative hemorrhages, 13 cases, 16 transfusions; 6 cures, 7 deaths; (*f*) hemorrhages from the female genital organs, 2 cases, 2 transfusion; 2 deaths; (*g*) traumatic hemorrhages, 2 cases, 3 transfusion; 1 cure, 1 death; (*h*) pernicious anemia and leukemia, 24 cases, 39 transfusions; 7 improved, 4 not improved, 13 deaths; (*i*) primary and secondary anemia, 4 cases, 7 transfusions; 3 cures, 1 improved; (*j*) preoperative and postoperative transfusions, 35 cases, 39 transfusions; 12 cures, 23 deaths; (*k*) sepsis, 5 cases, 7 transfusions, 5 deaths; (*l*) incurable conditions (transfusions performed at request of family) 12 cases, 12 transfusions; 12 deaths; (*m*) general debility, 6 cases, 8 transfusions; 1 improved, 1 result unknown, 4 deaths; (*n*) acute poisoning, 1 case, 1 transfusion, 1 cure.

American Journal of Ophthalmology, Chicago

February, 1919, **2**, No. 2

Scar Tissue Conjunctivitis in Animals—Relation to Insects and Trachoma. F. B. Eaton, San Francisco.—p. 81.
Thermotherapy of Corneal Ulcers. L. Weekers, Liége, Belgium.—p. 87.
Bitemporal Hemianopsia Due to Acute Suppuration of Posterior Nasal Sinuses. F. A. Conlon, Lawrence, Mass.—p. 92.
Monocular Retrobulbar Optic Neuritis from Hyperplasia of Ethmoid Bone: Report of Cases. D. T. Vail, Cincinnati.—p. 96.
Diseases of Uveal Tract. S. D. Risley, Philadelphia.—p. 104.
New "Malingeroscope." E. M. Alger, New York City.—p. 112.
Etiology of Phlyctenular Ophthalmia. H. H. Turner, Pittsburgh.—p. 115.
Perspective for Aviators. W. H. Dudley, Los Angeles.—p. 119.
Ophthalmoscopy with Red-Free Light of Vogt. R. Von Der Heydt, Chicago.—p. 122.
Correction of Cross-Eye. J. A. Kearney, New York.—p. 124.
Hyperplastic Exudative Retinitis (Nonhemorrhage.) J. W. Jervey, Greenville, S. C.—p. 127.

American Journal of Physiology, Baltimore

Feb. 1, 1919, **128**, No. 1

Effect of Narcosis on Electrotonus. T. P. Frizzell, Houston, Texas.—p. 1.
*Effect of Fatigue on Heart and Cardioskeletal Quotient. W. L. Mendenhall, Dartmouth.—p. 13.
*Output of Epinephrin in Shock. G. N. Stewart and J. M. Rogoff, Western Reserve University.—p. 22.
Electrical Responses of Eye to Stimulation by Light of Various Wave-Lengths. C. Sheard and C. McPeek, Columbus, Ohio.—p. 45.
Changes in Weights of Various Parts, Systems and Organs in Albino Rats Kept at Birth Weight by Underfeeding for Various Periods. C. A. Stewart, Minneapolis.—p. 67.
*Stimulation and Inhibition of Gastric Secretion which Follows Subcutaneous Administration of Certain Organ Extracts. J. Rogers, J. M. Rahe and E. Ablahadian, Cornell.—p. 79.
Rate of Respiratory Metabolism in Planaria. I. Effect of Potassium Cyanid on Rate of Oxygen Consumption. G. D. Allen, Minneapolis.—p. 93.
*Treatment of Severe and Progressive Hemorrhage by Intravenous Injections. W. G. Penfield, Baltimore.—p. 121.

Effect of Fatigue on Cardiac Irritability.—The evidence obtained by Mendenhall from his experimental work leads him to believe that the heart, like other tissues of the body, is affected by the products of fatigue. Extreme fatigue, i. e., carried to a point impossible of attainment by voluntary efforts, causes a depression of the electrical irritability of the heart, followed by a rise in irritability which may continue for some time. Moderate fatigue, i. e., carried to a point possible of attainment by voluntary efforts, causes a marked rise in the irritability of the heart muscle.

Output of Epinephrin in Shock.—The rate of output of epinephrin in dogs and cats, after the blood pressure had been permanently lowered by exposure and manipulation of the intestines, by partial occlusion of the inferior vena cava, by hemorrhage and by "peptone" injection, Stewart and Rogoff found to be the same as before the lowering of the blood pressure, within the limits of error of the methods used for assaying the epinephrin. A marked increase in the rate of output of epinephrin was produced by strychnin.

Influence of Organ Extracts on Gastric Secretion.—Rogers and his associates found that a slightly alkaline saline solution, or alcohol, extracts from the thyroid some noncoagulable material which is a vigorous stimulant for the gastric secretion. This material produces its effects at least in part by intensification of the functions performed by the terminal filaments of the (gastric) vagus. Extracts similarly made from the pathologic tissue of the adenomatous or hyperthyroid human glands are inert. Extracts of the suprarenal gland vigorously inhibit gastric secretion. These extracts all contain more or less epinephrin and, therefore, it is presumable that their effect is produced by intensification of the inhibitory function which is ascribed to the (gastric) sympathetic. Epinephrin is not as active a gastric inhibitor as suprarenal proteins obtained from extracts of the whole gland. These suprarenal nucleoproteins contain only traces of epinephrin. Extracts of the pituitary gland also inhibit gastric secretion, but only about one half as vigorously as do extracts of the suprarenal.

Treatment of Hemorrhage by Gum Solutions.—In the experimental work done by Penfield, the blood pressure of experimental animals was kept at a shock level for various lengths of time by progressive bleeding so that their condition resembled that which must frequently exist in wounded men at the front who have sustained severe and continued loss of blood. After analyzing the condition of these experimental animals according to the duration of low blood pressure, the amount of blood lost and the degree of acidosis resulting, Penfield was not able to show that gum-sodium bicarbonate solution or gum-glucose solution is more efficacious in saving life than is an isotonic solution of sodium chlorid. By perfusing an isolated vascular bed it was shown that following a large hemorrhage there is a primary constriction of the peripheral vessels. With continued low blood pressure this constriction passes off and dilatation supervenes. Associated with this dilatation the venous pressure rises while the arterial pressure is falling. All dogs in which the venous pressure rose while the arterial pressure was falling for a period of twenty minutes or more, died regardless of treatment. The effects of stimulation of the saphenous nerve while these animals were in a condition of profound shock indicated that the reflexes affecting respiration and blood pressure were not paralyzed.

American Journal of Obstetrics and Diseases of Women and Children, New York

February, 1919, **79**, No. 2

*Springs of a Nation's Life. E. P. Davis, Philadelphia.—p. 178.
*Influenza in Relation to Pregnancy and Labor. P. B. Bland, Philadelphia.—p. 184.
*Cesarean Sections Done at Long Island College Hospital During Past Six Years. A. C. Beck, Brooklyn.—p. 197.
*Cure of Prolapse of Uterus. A. M. Judd, Brooklyn.—p. 217.
An Epidemic of Vesicular Dermatitis of Newborn. J. O. Arnold, Philadelphia.—p. 225.
*Influenza: Its Influence on Gynecologic and Obstetric Conditions. L. K. P. Farrar, New York City.—p. 229.
*Influenza in Pregnancy. G. W. Kosmak, New York City.—p. 238.
*Influenza Complicating Late Pregnancy and Labor. W. E. Welz, Detroit.—p. 247.
Defiance of Surgical Principles Cannot Prevail. J. W. Kennedy, Philadelphia.—p. 252.
*Treatment of Sepsis. R. J. Behan, Pittsburgh.—p. 262.

Springs of a Nation's Life.—Abstracted in The Journal, Dec. 28, 1918, p. 2172.

Influenza in Relation to Pregnancy and Labor.—According to Bland's observations, epidemic influenza, of a mild and moderate character, occurring in pregnant women, is not associated with grave danger to the mother or her gestation. Influenza, when severe and associated with pulmonary complications, is an extremely serious affection and is associated with abortion or premature labor in a large percentage of cases, frequently followed by death of both mother and child. The disease in the mother is distinctly a contact infection.

Cesarean Sections.—In Beck's series of thirty-seven cases only one mother died; death was due to eclampsia.

Cure of Prolapse of Uterus.—The Sims-Emmett-Baldwin combined procedure has been used by Judd for five years with uniformly good results.

Influence of Influenza on Gynecologic and Obstetric Conditions.—A review of the literature by Farrar disclosed that mild attacks of influenza have no influence on gynecologic or obstetric conditions. Severe attacks produce menorrhagia and exacerbation of chronic gynecologic conditions, and often abortion, premature delivery, or stillbirth. Labor is prolonged and tedious. Pregnancy has an unfavorable influence on the course of a bronchitis or pneumonia influenza. Induction of labor has no beneficial effect on the course of influenza. The chances of general infection are greater if influenza occurs during the puerperium.

Influenzal Pneumonia in Pregnancy.—Kosmak does not agree with others in the belief that pregnant women are more liable to contract influenzal pneumonia than the nonpregnant.

Influenza Complicating Late Pregnancy.—According to Welz, the prognosis for women suffering from influenza in late pregnancy or labor is good, providing there is no pulmonary complication. A small percentage have premature labor with a considerable number of stillbirths. Those suffering the complications of lobar pneumonia or bronchopneumonia are desperately ill. If the case be mild with slight symptoms of toxemia the result may be favorable. The severe type is almost invariably fatal. Cyanosis, air hunger, leukopenia and low blood pressure are unfavorable signs. A change from leukopenia to leukocytosis signifies a favorable reaction. An increase of systolic and especially diastolic pressure is a hopeful sign. Increasing cyanosis and air hunger indicate a rapidly fatal termination.

The severe cases of pneumonia in late pregnancy suffer from a severe toxemia. The fate of the fetus is linked with that of the mother. An effort to save one, disregarding that of the other is apt to be disastrous to both. Hope for both lies in overcoming the toxemia and not in induced labor or forced delivery. It is the toxic state which is fatal, not the delivery, though this is an added strain on the mother. So efforts to hurry delivery are more harmful than noninterference. Just as in eclampsia, the best results will come from efforts to control the toxemia. The chances for the fetus are bad. The toxic state either causes antenatal death or premature labor which is apt to be fatal to the fetus. The fetal mortality is lessened where the mother recovers. There it is inadvisable to make efforts to save a morbid child by means which are detrimental to maternal life. All efforts should be made to control the toxic state early in the disease. The best hopes for both mother and child lie not in meddlesome obstetrics but in overcoming the toxemia.

Treatment of Sepsis.—Behan's article may be summarized as follows: Sodium carbonate or bicarbonate has a definite place in the treatment of infections. It seems in early stages of sepsis, including pneumonia, to be almost specific. In the later stages of pneumonia and of sepsis, injection is apparently contraindicated. In the early stages of infection the intravenous method of injection is the best. Glucose solution, if used in the later stages of pneumonia, should be used alone because the exhibition of the alkali reduces the coagulability of the blood to such a degree that it causes a tendency to pulmonary edema. If the glucose solution is to be used in the early stages of pneumonia it may, because of the increased viscidity of the blood, hinder the exudation. Salvarsan is also of value, especially in septicemia. Vaccines are of value in certain cases and in all obstinate infections should be exhibited. Vaccines in overdose seem to have a deleterious influence. Antistreptococcic serum is of great value in streptococcic infection. It, however, should not be given on a falling temperature and if the temperature remains stationary it should be given only in greatly reduced doses. A chill following its administration is not a bad omen. It should never be mixed with any foreign material. Large initial doses should be given, however, in all cases; small preliminary injections should be given as a test for serum sickness. Transfusions of blood are of distinct value in sepsis, especially in those cases of falling blood pressure.

Archives of Internal Medicine, Chicago

Feb. 15, 1919, **23**, No. 2

*Cause of Reactions Following Transfusion of Citrated Blood. C. K. Drinker and H. H. Brittingham, Boston.—p. 133.
Chronic Form of Meningococcus Meningitis: Report of Cases. A. Gordon, Philadelphia.—p. 150.
*Cardiac Arrhythmias of Atrial Origin Occurring in Patient with Focal Infections and Thyroid Adenomata. L. F. Barker, and H. B. Richardson, Baltimore.—p. 158.
*Pituitary Headaches and their Cure. I. H. Pardee, New York.—p. 174.
*Etiology of Cholecystitis and its Production by Injection of Streptococci. R. O. Brown, Rochester, Minn.—p. 185.
*Physiologic Action of Cantharis. S. Morgulis and A. L. Muirhead, Omaha.—p. 190.
*Hydrocephalus and Choked Disk in Dogs. L. H. Kornder, Davenport, Iowa.—p. 197.
*Treatment of Bronchial Asthma with Vaccines. I. C. Walker, Boston.—p. 220.
Differentiation of Nephropathies, Cardiopathies and Allied Conditions by Determination of Physical Constants. A. O. Gettler and R. Oppenheim, New York.—p. 235.
Pathology of Pancreatic Ferments. H. Wago, Chicago.—p. 251.

Transfusion Reactions.—No method of transfusion is reaction-free, and the reactions have been ascribed to a variety of causes, but without effort at experimental analysis. Drinker's and Brittingham's experience with transfusion by the citrate method gives a larger number of reactions than are reported elsewhere. Out of eighty-three transfusions they have had a rise in temperature of 2.5 degrees fifty times, or 60 per cent., and of this number thirty-nine, or 47 per cent., have had chills. These figures include all the transfusions of whole citrated blood which have been done by different individuals at the Brigham Hospital. In order to test the matter further they have done seventeen such transfusions, using the most extreme care in the effort to reduce the reaction percentage. In these transfusions there were nine rises in temperatures above 2.5 degrees, or 53.3 per cent., and seven chills, or 40 per cent. Removal of the plates and a comparable number of white cells by defibrination, with thorough washing and suspension of the red cells in similar saline solution has resulted in 20 per cent. of reactions in fifteen transfusions. Addition of citrate from one to two hours before injection to transfusing blood so prepared has resulted in 44 per cent. of reactions in nine transfusions.

While the totals of the different types of transfusions which have been employed are not large, it appears that three elements make up the final total of reactions in citrate transfusion: (*a*) very rare gross incompatibilities, which escape in vitro detection (*b*) changes in the plates, part of the process of coagulation; (*c*) direct action of the sodium citrate on red cells promoting hemolysis.

Cardiac Arrhythmias.—Barker and Richardson record a case in which remarkable disturbances of cardiac rhythm were encountered in association with (1) peridental, maxillary and tonsillar infection, and (2) minute adenomata of the thyroid gland; and in which marked improvement followed treatment of the infected foci and partial thyroidectomy. There were observed in this patient at one time or another the following: (1) physiologic rhythm; (2) dislocation of the pacemaker from the sino-atrial node to points elsewhere in the atrium; (3) alternate atrial extrasystoles; none of which provokes a ventricular response; (4) alternate atrial extrasystoles, many of which provoke a ventricular response; (5) paroxysmal tachycardia and atrial flutter.

Pituitary Headaches.—A disproportion between the pituitary body and the sella produces pressure on the sensory nerves to the dura; and by its encroachment on the cavernous sinuses it may cause interference with the cerebral circulation, the whole setting up the train of pituitary symptoms, including headache. Pardee describes pituitary headache as having three characteristics: its location; its duration and persistence, and its relief under specific medication. The headache is situated "deep in the forehead behind the eyes." Deep pressure on the temples may elicit some tenderness. This headache is very persistent, usually lasting from one-half hour to forty-eight hours, and it may be continuous, frequently coming on in the female at the time of the menses. It often leaves very suddenly, returning again with exacerbations; it is accentuated by excitement, stooping over, and by the ingestion of sugar. At the climax of the headache there may be nausea and vomiting, with which there will come relief. Marked fatigue accompanies the headache, the patient hardly being able to drag himself about, and there is present to stroking a broad white skin line as evidence of suprarenal deficiency caused by the drain on the suprarenal function by the exhausted pituitary. The patients feel slowed down in their activity, yawn excessively, are sluggish and willing at any moment to seek an opportunity for sleep. These patients are particularly prone to attacks of depression, which come on without any cause, and have as their basis some very insignificant fact.

Knowing that the pituitary, together with the suprarenals, controls the mobilization of sugar in the body, it is not strange that these patients should have anomaly of sugar metabolism, as is seen in the periodic development of an intense craving for sweets, a sort of dipsomania, as it were, for sugar. The satisfaction of this desire being completed by eating candy, it is almost invariably followed by a typical pituitary headache. Owing to the increased demand on it, there is an enlargement of the pituitary gland, and following on this the suprarenals are called on to assist in mobilizing the sugar, the excessive drain on them causing great fatigue and the formation of a vicious circle. The administration of whole pituitary is a specific, ¼ to 2 grains three times a day; an average for an adult is 1 grain, preferably given one hour after meals. Continuous medication with pituitary will result within a few days in a decrease in the intensity of the headaches; there will be a longer period between their occurrence, the head will feel less "tight," and fatigue, nausea, and vomiting will also disappear.

Etiology of Cholecystitis.—By making cultures of the emulsified tissues of gallbladders or adjacent lymph glands, streptococci were found by Brown to be the chief microorganisms associated with cholecystitis. The direct etiologic relationship of the streptococcus is established by their presence, often in numbers proportionate to the degree of gross and microscopic changes, by their having elective affinity for the gallbladder of animals and by the specific agglutinating power of the serum of the patient from whom isolated. The elective affinity for the gallbladder of animals of the strains from the tonsils indicates strongly that cholecystitis is commonly a blood borne infection from a focal source.

Physiologic Action of Cantharis.—From their investigation Morgulis and Muirhead conclude that cantharis is not a drug which may be used experimentally to induce polycythemia, inasmuch as it does not cause a production of new red cells, but merely occasions a condensation of the blood through the loss of water in the process of elimination of cantharis by the kidneys.

Hydrocephalus and Choked Disk in Dogs.—Kornder summarizes the results of his experiments as follows: The production of hydrocephalus in dogs is accompanied by a distended optic sheath, hemorrhages and engorgement of the retinal veins and an edematous swelling of the nerve head, thus presenting features which characterize choked disk in man. This introduction of fluid under tension into the subdural space will also produce a like picture. The introduction of fluid under tension into the subdural spaces in a dog that is thoroughly atropinized will lead to nothing further than just the congestive features of choked disk, and this only after a long period of sustained high intracranial pressure. A venous stasis produced by ligation of the external jugular is insufficient to cause any optic disk changes. The production of choked disk in cases of hydrocephalus is not dependent on the presence of inflammatory factors but arises mechanically as a result of high venous pressure and an obstructed lymph drainage, both caused by the primary factor, the increased intracranial pressure.

Vaccine Treatment of Bronchial Asthma.—Twenty-eight patients with bronchial asthma were treated by Walker with vaccines of the bacteria to which they were sensitive; 75 per cent. were relieved of asthma, and 21 per cent. were improved. Seventy-five nonsensitive patients were treated with vaccines made from culturing their sputum on plain agar; the predominating organism was usually the one selected for treatment; 46.6 per cent. were relieved of asthma and 16 per cent. were improved. Twenty-four nonsensitive patients were treated with vaccines made from culturing their sputum in dextrose bouillon and using only the streptococci; 37.5 per cent. were relieved of asthma and 25 per cent. were improved. Thirty-five nonsensitive patients were treated with vaccines made from culturing the sputum both ways; in other words, many types of vaccines were used; 31.4 per cent. were relieved and 23 per cent. were improved. Sixteen nonsensitive summer asthmatics were treated with vaccines, 31.2 per cent. were relieved and 25 per cent. were improved. Therefore, of 150 nonsensitive asthmatics who were treated with vaccines, 40 per cent. were relieved and 20 per cent. were improved. With the sensitive cases, the age of onset of asthma, the duration of asthma and the age of the patient when treated had little to do with the prognosis; however, with the nonsensitive cases these facts had much bearing on the prognosis; the older the patient is when asthma begins and the older he is when treatment is begun, the more unfavorable the prognosis from vaccines in nonsensitive cases. The permanency of relief from vaccines in the nonsensitive cases depends on the individual's resistance to the bacteria in question; therefore, the duration of relief from asthma varies.

Arkansas Medical Society Journal, Little Rock

February, 1919, **13**, No. 9

Role of Appendix in Acute Abdomen. J. T. Palmer, Pine Bluff. —p. 163.
Preventable Blindness. W. T. McCurry, Little Rock.—p. 166.

Boston Medical and Surgical Journal

Feb. 20, 1919, **180**, No. 8

*Acute Changes Occurring in Cells of Solar Plexus in Intestinal Conditions. A. Myerson, Boston.—p. 208.
Cases of Pregnancy Associated with Tumor. F. W. Johnson, Boston. —p. 209.
*Subcutaneous Rupture of Spleen. I. J. Walker, Boston.—p. 211.
Influenza. J. Speares, Dublin, Ireland.—p. 212.

Acute Changes in Cells of Solar Plexus in Intestinal Conditions.—Two cases of insane patients are cited by Myerson in which acute intestinal conditions were associated with acute changes of the nerve cells of the type described as acute Nissl degeneration. A dementia praecox patient, woman of middle age, dying of volvulus, showed acute axonal reaction in the sympathetic cells of the solar plexus, without corresponding changes elsewhere. A juvenile paretic, dying of pleurisy with effusion of tubercular origin, fecal impaction and congestion of peritoneal blood vessels, showed acute axonal reaction in the sympathetic cells of the solar plexus.

Subcutaneous Rupture of Spleen.—Walker's patient was kicked by a horse in the upper abdomen, but continued to work, loading and unloading coal wagon until noon when a fellow workman told him to stop as he did not look well. His only complaint was a slight pain in the abdomen. The patient walked to a doctor's office. The doctor gave him codein for what appeared to be a slight diaphragmatic pleurisy. There was nothing further found on examination except slight tenderness over the left upper abdomen. The pulse, temperature and respiration were normal and remained so during the next few days. On the third day the patient, without permission, sat up to eat his dinner. About noon the next day the patient suddenly felt "something give way" in the upper abdomen. He went into a state of collapse. There was marked pallor and thirst. The abdomen was considerably distended, with rigidity and spasm on the left side, especially in the upper half. There was also shifting dulness in the flanks. Under ether, the abdomen was opened through a high left rectus incision. There was at once an escape of large amounts of old and fresh blood. Quick exploration revealed a ruptured spleen which was bleeding profusely. Splenectomy was done. At the end of the operation the patient's condition was poor. Salt solution was given intravenously and the patient stimulated. He refused to allow transfusion. He died two days later. Examination of the spleen after removal showed the capsule loosened from the surface as if it had been lifted by a slow extravasation of blood from beneath. The peritoneal covering, capsule and spleen itself were torn through the middle, in a line running from the hilus backward to the posterior aspect, practically dividing the organ into two pieces.

Boston Medical and Surgical Journal, Boston

Feb. 27, 1919, **180**, No. 9

Need of More Frequent Roentgenologic Examinations, Particularly in Head Injuries. J. Shohan, Boston.—p. 235.

Colorado Medicine, Denver

February, 1919, **16**, No. 3

Surgical Treatment of Pulmonary Tuberculosis: Extrapleural Thoracoplasty. M. O. Shivers, Colorado Springs.—p. 27.
Influenza at Denver County Hospital. H. Sewall, Denver.—p. 33.
Birth Registration in Colorado. J. W. Morgan, Denver.—p. 38.
Roentgen Therapy for Superficial Malignancy: New Coolidge Tube Technic. H. P. Brandenburg, Denver.—p. 41.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1919, **5**, No. 7

Papillitis. S. G. Gant, New York City.—p. 115.
Duty of Medical Profession to State Industrial School. R. Kime, Lakeland, Fla.—p. 117.

Medical Record, New York City

March 1, 1919, **95**, No. 9

Pneumonia: Major General of Death. C. N. Haskell, Bridgeport, Conn. —p. 349.
Six Years' Experience with Radiotherapy in Cancer. M. J. Sittenfeld, New York City.—p. 351.
*Myristica (Nutmeg) in Treatment of Amebic Dysentery. J. Leidy, Philadelphia.—p. 354.
Musk in Pneumonia. W. C. Allen, Chicago.—p. 356.
Peculiarities in Symptomatology of Exophthalmic Goiter. I. Bram, Philadelphia.—p. 358.
Case of Dermatitis Coccidiosa. J. Seliin, Chicago.—p. 360.
Five Bronchoscopic and Esophageal Cases. J. E. Sheeban, New York City.—p. 361.

Nutmeg in Treatment of Amebic Dysentery.—A dysentery patient who had resisted treatment with emetin was placed by Leidy on 30 grains of selected grated nutmeg three times a day, care being taken to obtain a pure extract. The effect of treatment on the subjective symptoms was decided and prompt; the frequent spasmodic (colitic) pain disappeared; three days later, examination of stools showed fewer cysts, with abatement of *Trichomonas intestinalis* infection. At the expiration of seven days very few cysts were found; the patient has shown steady improvement in his physical condition. Three weeks after treatment no cysts were found. Regular examination of the stools for the past four months, by the ether centrifuge method, has been negative, as to both the vegetative and the cystic forms.

Nebraska State Medical Journal, Norfolk

February, 1919, **4**, No. 2

Epidemic of Influenza and Pneumonia. M. G. Wohl, Omaha.—p. 49.
Botanist's Suggestion on Influenza. F. E. Clements, Tucson, Ariz.—p. 50.
Spanish Influenza. H. W. Saylor, Bruening.—p. 52.
Chronic Ophthalmia: Source of Frequent and Serious Mistake in General Practice. H. Gifford, Omaha.—p. 53.
Nitrous Oxid-Oxygen Analgesia in Obstetrics. A. L. Smith, Lincoln. —p. 54.

New Orleans Medical and Surgical Journal

February, 1919, **71**, No. 8

Spinal Analgesia, with Apothesine. P. J. Kahle.—p. 366.
Obturator for Congenital Cleft-Palate. A. G. Friedrichs.—p. 367.
Wounds of War from Biologist's Point of Observation. E. Bertarelli. —p. 368.

New York Medical Journal, New York City

Feb. 22, 1919, **109**, No. 8

"Higher Up" Theory of Sterility in Women and Relation to Endocrines. S. W. Bandler, New York City.—p. 309.
Psychic Hydrophobia. J. D. Quackenbos, New York City.—p. 313.
*Successful Nonsurgical Therapy of Exophtalmic Goiter. I. Bram, Philadelphia.—p. 314.
*Pertussis Vaccine as Routine Treatment in Whooping Cough. P. Luttinger, New York City.—p. 322.
Rolls (Somersaults) Before Breakfast . W. Brady, Elmira.—p. 323.
Essentials of Bárány Tests. S. Cohen, Philadelphia.—p. 324.
*Nocturnal Enuresis. J. A. Allis, New York City.—p. 326.
American Women's Hospitals in France. B. Hunt, Bangor, Me.—p. 328.
Sterile-Pocket Instrument Case. F. Griffith, New York City.—p. 331.
Prophylaxis and Treatment of Influenza. L. T. de Sajous, Philadelphia.—p. 331. (Continued.)

March 1, 1919, **109**, No. 9

Fourteen Points Concerning Ophthalmia Neonatorum. F. Allport, Chicago.—p. 353.
Chronic Headaches with Painful Points. G. T. Stevens, New York City.—p. 355.
Carrel-Dakin Treatment. W. P. Cunningham, New York City.—p. 358.
Orbital Disease of Nasal Origin. E. L. Meierhof, New York City. —p. 365.
Linear Dermatoses. F. Wise, New York City.—p. 367.
Improved Bone Surgery Equipment. H. C. Masland, Philadelphia. —p. 370.
Removal of Foreign Bodies from Lung. J. W. Murphy, Cincinnati. —p. 372.
Prevention of Influenza by Maintenance of Uniform Room Temperature. S. L. Burton, Albuquerque.—p. 374.
New Principle (Sensitizer and Developer) for Treatment of Gonorrhea. F. S. Mason, New York City.—p. 374.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 375.

Nonsurgical Treatment of Exophthalmic Goiter.—The treatment used by Bram in the cases cited was hygienic, dietetic, medicinal, electrical and hydropathic. He insists that in the treatment of exophthalmic goiter, individualization is of inestimable importance. Rest, physical and mental, must characterize all treatment instituted in this disease. The maintenance of the digestive functions in as normal a condition as possible is of vital importance. In every case Bram gives quinin hydrobromate, 4 or 5 grains, three times a day, combined with an appropriate hematinic and a harmless sedative. He believes that such a mixture acts in a specific fashion, all things being equal.

Vaccine Treatment of Whooping Cough.—A further experience has confirmed Luttinger's belief that pertussis vaccine, when given in high doses and at the proper intervals is the best remedy for the prevention and cure of whooping cough. With the exception of very severe cases these patients received no other treatment but the vaccine. The usual hygienic precautions regarding fresh air and the regulation of feeding are taken. The doses are as follows for a child 1 year old: half a billion, 1 billion, 2 billion, 4 billion, 8 billion and 16 billion. The injections are given subcutaneously with an ordinary hypodermic syringe, every other day, an interval of five days being allowed between the third and fourth dose for recuperation. For prophylaxis, the first three doses are sufficient.

Nocturnal Enuresis in Adults.—The ages of the sixteen soldiers whose cases are cited by Allis ranged from 19 to 31 years. The treatment employed was varied to suit individual cases. As they were all consistently wetting their beds from one to three times a night they were awakened at intervals of about two hours, the time being lengthened as individuals showed improvement. Bowels and diet were carefully looked after. The most important part of the treatment, Allis believes, was the local application through the endoscope of varying strengths of nitrate of silver solution 1 to 5 per cent., varied at times with deep instillations of 2 or 3 drops of the same solution, or anterior irrigations of the urethra with a solution of silver one to 3,000 or 5,000. These treatments were given at intervals of about four or five days. In a few of the cases Allis gave belladonna and ergot internally in small doses, but apparently it did not help much.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

February, 1919, **27**, No. 2

Complications and Sequelae of Influenza. C. J. Fishman, Oklahoma City.—p. 25.
Cancer Problem; Roentgen Therapy. J. M. Martin, Dallas, Texas. —p. 34.
Common Hernias.—p. 37.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 8, 1919, **2**, No. 3032

*Sodium Morrhuate in Tuberculosis. L. Rogers.—p. 147.
Teaching Obstetrics and Gynecology to Medical Students. W. S. A. Griffith.—p. 148.
*Criticism of Some Modern Methods of Infant Feeding. G. D. Laing. —p. 150.
*Treatment of Early Syphilis. R. Gibson.—p. 151.
Prophylactic Treatment of Venereal Disease. A. Reid.—p. 152.
*Proflavine Oleate in Treatment of Open Wounds. C. Berkeley and V. Bonney.—p. 152.
Influenza Epidemic in Bristol. J. W. Taylor.—p. 153.
Influenza Epidemic in Bristol General Hospital: Use of "N. Pane's Siero Antipneumonico" for Prophylaxis and Treatment of Pulmonary Complications. A. J. Lim.—p. 154.
Use of Formalin Sprays in Checking Influenza Epidemic. A. Wylie. —p. 155.

Sodium Morrhuate in Tuberculosis.—By a similar process to that by which sodium gynocardate is made from chaulmoogra oil, a preparation has been made of the sodium salts of the unsaturated fatty acids of cod liver oil after extraction by ether. Rogers has termed this preparation "sodium morrhuate." A 3 per cent. watery solution is sterilized in an autoclave and 0.5 per cent. phenol is added. This may be injected subcutaneously with very little pain, and also intravenously. Its subcutaneous injection is nearly painless, and a year's experience has shown it to be of great value in leprosy. Rogers regards this as being a most important point, as it proves that there is nothing absolutely specific in the products of chaulmoogra oil in that disease, and supports his view that the sodium salts of the unsaturated fatty acids of these two oils act in some way on the coating of the acid fast bacilli, that of tuberculosis having been shown to contain palmitic and other unsaturated fatty acids.

During the past year sodium morrhuate has been used with very promising results in tuberculosis by several careful observers, and morphologic changes have been noted in the tubercle bacilli in the sputum. Rogers usually begins with 0.5 c.c. of the 3 per cent. solution, and increases it by 2 to 4 minims at each injection, which may be given two or three times a week until a reaction occurs; then a week's interval is left and the dose reduced. The injections are given subcutaneously until they reach an inconvenient size, such as 2 c.c., when intravenous injections can be begun with 0.5 c.c., gradually increased in the same way as with the subcutaneous ones. Improvement of phthisical cases is seen in reduction and cessation of fever, diminution of expectoration and cough, and steady gain in weight: the tubercle bacilli in the sputum greatly decrease in numbers, and may in time disappear. Moreover, they commonly show deficient acid staining and a granular or beaded appearance, indicating that they are actually being destroyed within the tissues.

Improved Methods of Infant Feeding.—Laing urges greater quantities of food, and shorter intervals of feeding, depending on the size of the child, and its digestive powers.

Treatment of Early Syphilis.—Gibson uses mercury, arsenic compounds and potassium iodid. He says that mercury alone can cure many cases of syphilis if persisted in for a sufficiently long time, but it is questionable if a course of less than two years is of any value at any stage of the disease. With arsphenamin and its alternatives, however, the term of active treatment can be shortened greatly, and in the very early stages of the infection the disease can be aborted, although it may be advisable to keep the patient under observation for two years. Gibson believes that a positive reaction is indicative of syphilis in its secondary stage, and the disappearence of the positive reaction for six months after treatment with mercury has been discontinued is evidence of cure. He has not seen a case of secondary syphilis—which has not had any treatment—give a negative reaction; nor has he seen a case of secondary syphilis which gave a negative reaction for six months after treatment with mercury and arsphenamin was discontinued again develop a positive blood test, unless reinfected.

Proflavine Oleate in Treatment of Wounds.—Berkeley and Bonney draw attention to the value of proflavine oleate in the treatment of certain war wounds, notably those in which an exceeding tender raw surface of considerable extent exists, the dressing of which is productive of acute pain. Their method consists in either spreading a thick layer of the oleate ointment on a single thickness of white gauze and then applying it to the wound, or spreading the oleate direct on to the surface of the wound and then covering it with a single layer of gauze. This dressing does not need to be changed for several days, and, when it is removed, strips off from the sensitive surface without any dragging or pain. It is equally applicable to any large flat-surfaced wounds, such as those left after wholesale excision of the thigh or buttock muscles and so forth. The authors suggest that after all operations in which a flat raw surface is necessarily left, the wound should, from the first, be dressed with proflavine oleate, in the manner described.

Dublin Journal of Medical Science

February, 1919, **147**, No. 566

Ireland and a Ministry of Health. T. Hennessy.—p. 49.
Diagnosis and Treatment of Syphilis. G. E. P. Meldon.—p. 62.
Id. H. C. Donald.—p. 70.

Edinburgh Medical Journal

February, 1919, **22**, No. 2

Fracture of Neck of Femur in Children. D. M. Greig.—p. 75.
*Radium Treatment. D. Turner.—p. 79.
Scopolamin Morphin Narcosis or Twilight Sleep. R. Wallace.—p. 87.
Carcinoma of Liver Associated with Infection By Clonorchis Sinensis. H. L. Watson-Weymss.—p. 103.
Training of Student of Medicine: LXIV. Dental Surgery. W. Guy. —p. 105.
Id. LXV. Dental Surgery. J. H. Gibbs.—p. 106.
Id. LXVI. Ear, Nose and Throat. A. L. Turner.—p. 109.
Id. LXVII. Ear, Nose and Throat. J. M. Farquharson.—p. 111.
Id. LXVIII. Place of Radiology in Medical Curriculum: Need for Coordination in Teaching. R. Knox.—p. 118.

Radium Treatment of Exophthalmic Goiter.—One of the conditions for which Turner has found radium consistently useful is exophthalmic goiter. He has treated upward of fifty cases, and with one exception all of those patients have derived more or less benefit. The exception was a woman of 22 years of age, who suffered from extreme nervousness, and who died of hyperthyroidism and toxic phenomena within a fortnight of the treatment. The benefit that patients with exophthalmic goiter derive from the expert application of radium is reflected in their general condition and in their special symptoms. They regain strength, lose the tired feeling and put on weight, and at the same time the tachycardia, tremor, and breathlessness are diminished and may disappear altogether. The thyroid gland becomes harder, denser, but usually does not diminish in size, and the exophthalmos is but little affected. Turner treats each lobe, and the isthmus of the thyroid, and the thymus. A dose of from 200 to 400 milligram hours, properly screened so as to avoid injury to the skin, may be given over each of these areas, and the patient may then be sent home for some three months, when more treatment may, if necessary, be given. As the skin over the front of the throat appears to be very sensitive to radium rays, great care should be taken to avoid over exposing it.

Journal of State Medicine, London

February, 1919, **27**, No. 2

Anthropometry and National Health. A. Keith.—p. 34.
Care of Pensioners and Disabled Combatants in Relation to National Health and Wealth. J. Collie.—p. 43.

Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1919, **22**, No. 3

*Etiology of Sprue, Pellagra and Scurvy.—L. Nicholls.—p. 21.
Sprue Associated with Tetany. P. W. Bassett-Smith.—p. 24.

Etiology of Sprue, Pellagra and Scurvy.—According to Nicholls, most of the circumstances connected with sprue support the view that it is caused by the infection of a microorganism, whereas, scurvy is more or less dependent for its appearance on a lack of some necessary constituents in the diet, previously consumed by the sufferers; in these respects, pellagra falls midway between these diseases, and for every suggestion that it is an infectious disease, a considerable opinion exists that its etiology is explained by the nature of the patient's antecedent diet. Nicholls thinks that no cases of these diseases will occur unless both factors are present to some extent, but it must be remembered that the deficiency in a diet may be greater or less; and the degree of pathogenicity of an organism and the resistance to it varies. The latter is the predominant factor in sprue, and the former in scurvy, but they are fairly evenly balanced in pellagra.

Lancet, London

Feb. 8, 1919, **2**, No. 4980

Gizzards and Counterfeit Gizzards. J. Bland-Sutton.—p. 203.
Medical Aspects of Aviation. L. E. Stamm.—p. 206.
Some Simple Tests of Physical Efficiency. M. Flack.—p. 210.
Treatment of Venereal Disease. A. Reid and P. H. Boyden.—p. 212.
*Hilus Tuberculosis in Adult. C. Riviere.—p. 213.
*Substitution of Air for Oxygen in Anesthesia. J. H. Fryer.—p. 216.
Stammering in War Psychoneuroses. E. Prideaux.—p. 217.
*Staining Diphtheria Bacillus by Toluidine Blue-Acetic Acid Mixture. P. L. Sutherland.—p. 218.

Hilus Tuberculosis in Adult.—The term hilus tuberculosis in the adult as used by Riviere refers to a fresh and active process, involving the deep areas of the lungs where remain the old foci of childhood infection, and thence spreading outward toward the surface. It thus stands in close relationship to the common form of tuberculosis of childhood, though with less tendency to glandular involvement; and also in decided contrast to apical phthisis of adults, a localized infiltration involving the apex of the lung. Hilus tuberculosis is commonly a peribronchial disease of chronic and intermittent course. Such symptoms as are of toxic origin are identical for hilus tuberculosis and apical phthisis. In addition, certain symptoms occur which may be considered more characteristic of hilus tuberculosis than of apical phthisis. Particularly, shortness of breath on exertion is a symptom which is often prominent, and due in some cases to widespread peribronchial disease and in some to the emphysema and bronchitis which are occasional complications. Chest pain is also fairly common, often in the central regions of the chest, occasionally in the side in association with the marginal pleurisies which are such frequent accompaniments of this disease. Most important of all as evidence of deep disease is a bilateral narrowing of "Krönig's isthmus" of apical resonance at the top of the shoulder. The whole clinical history of the affection is discussed in detail by Riviere.

Substitution of Air for Oxygen in Anesthesia.—During a temporary failure in the supply of oxygen for anesthetic purposes, Fryer tried ordinary air in place of oxygen with the Hewitt apparatus. This proved so satisfactory that he has entirely discontinued the use of gas and oxygen, and some hundreds of administrations of duration varying from a few minutes to a full hour have been given by the air method. No ill effects have been noticed during or after administration, and there has not occurred any instance of postanesthetic vomiting. The limitations of this method are much the same as those of gas and oxygen, though it is easier to produce and maintain a satisfactory degree of muscular relaxation when using air. It is very easy to administer in cases where vitality has been reduced by shock, hemorrhage, or sepsis, while strong, full-blooded men are difficult subjects. Fryer has not so far used the method for intra-abdominal operations, and for intrathoracic he prefers oxygen bubbled through chloroform and warmed by the Shipway apparatus; but for amputations and most general surgical procedures it is well adapted unless postural requirements contraindicate by rendering it difficult to maintain the facepiece in position. This method has advantage over gas and oxygen from the points of view of economy and portability of apparatus.

Staining Diphtheria Bacillus with Toluidin Blue Mixture.—The staining solution which Sutherland has used for eight years has the following composition: toluidin blue, 0.1 gm.; glacial acetic acid, 0.5 c.c.; distilled water, 100 c.c. The smears are made on slides and are fixed with heat in the usual way. When large numbers of cultures have to be examined it is most convenient to make the smears in a series of ten or twelve at one time. A drop of the stain is placed on each film and a coverglass is then placed over the preparation. The excess of stain is removed by blotting each slide between two layers of blotting paper immediately before being examined. The first slide is ready for examination about one minute after the stain is applied, and the others are taken in rotation. The best results are obtained by using strong artificial light. When slides are stained in this way the polar granules of *B. diphtheriae* are of a deep reddish purple, while the bodies of the bacilli appear faintly blue. Most of the organisms found in diphtheria swabs, including Hofmann's bacillus, are more faintly stained, so that *B. diphtheriae* is readily detected when present only in small numbers. The stain may also be used in a similar manner for demonstrating the bacillus in smears made direct from the swabs, in which case the film should be allowed to stand in the stain for from two to three minutes before removing the excess.

Medical Journal of Australia, Sydney

Jan. 4, 1919, **1**, No. 1

Effects of Hookworm Infection on Mental Development of North Queensland School Children. J. H. Waite and I. L. Neilson.—p. 1.
Pitfalls of Pregnancy. E. Ludowici.—p. 8.

Jan. 11, 1919, **1**, No. 2

Poliomyelitis; Pathology Notes and Experimental Study. R. Webster. —p. 22.
Cesarean Section (Abdominal) in Transverse Presentation. A. Krakowsky.—p. 28.

Jan. 18, 1919, **1**, No. 3

*Causes of Kidney Pain and Treatment: Exclusive of Stone, Tuberculosis and Infection. S. H. Harris.—p. 41.
*Improvement in Technic of Perineal Capsulo-Prostatectomy. L. M. McKillop.—p. 48.
Case of Angioneurotic Edema, Combined with Urticaria with Purpuric Staining, Raynaud's Disease and Scleroderma. H. Swift.—p. 49.

Jan. 25, 1919, **1**, No. 4

*Influenza Epidemic in Dunedin, New Zealand. S. T. Champtaloup and A. M. Drennan.—p. 63.
Microbes Ostensibly Responsible for Pneumonic Influenba. F. Tidswell.—p. 69.
Influenza in New Zealand. J. P. Hastings.—p. 70.
Influenza and Other Epidemics. C. MacLaurin.—p. 71.

Causes of Kidney Pain and Treatment.—Harris cites cases of stricture of the ureter, renal tumor, obstruction of ureter at ureteroplevic junction by aberrant vessels, fascial bands, etc., ureteral obstructions from tumors in the abdomen and pelvis (e. g., uterine fibroids, cancer of the cervix uteri, etc.); certain bladder lesions, e. g., benign and malignant growths, diverticula, etc.; seminal vesiculitis; inflammatory conditions of the broad ligaments and of the appendix; obstruction of the urethra by syricture, prostatic hypertrophy, median bar formation as causing kidney pain. The treatment in each instance is outlined.

Prostatectomy.—The procedure which McKillop has employed in three cases is said to render the operation safer and more rapid of accomplishment. The space of Retzius is exposed through an abdominal incision. A gauze sponge in keeping with the size of this space is tightly packed in position, so as to push the bladder well down toward the perineum. The usual curved transverse incision is next made across the perineum and deepened until the perineal muscles are met with. The plane of cleavage between the rectum and the bulb is sought for and opened up. The prostate gland will be found lying low in a most accessible position. The dissection is further deepened until the false capsule is exposed; it must be continued externally to that structure. Counter pressure is made over the hypogastric swab until the prostate is pushed down almost flush with the perineum when the subsequent steps are carried out under the guidance of the eye. The bleeding, which in these cases is usually a source of much danger, can be controlled with the greatest ease. The puboprostatic and the lateral true ligaments of the bladder are cut through, and with a little care the finger is hooked over the pelvic fascial capsule and the gland separated from the base of the bladder external to the internal sphincter. When further separation is impossible the bladder wall is cut through in a circular manner. The vasa deferentia and the membranous urethra, with its contained catheter, are then completely divided and the prostatic capsule and its gland removed in toto. A fresh, large-sized catheter is passed down the urethra, to replace the divided one. The new catheter is guided into the bladder. All bleeding points are very carefully caught and ligated, and the redundant portion of the bladder wound closed with catgut, care being taken to avoid catching up the bladder mucosa. A gauze drain in a split tube is introduced down to the base of the bladder. Iodoform gauze is packed firmly about this, and the lateral portion of the transverse perineal wound united by silkworm-gut sutures. The gauze packing in the perineal wound is taken out and replaced in forty-eight hours, and the tube is removed on the fourth day. The indwelling catheter is changed daily after the first week, and sounds are susequently passed.

Vaccine Therapy of Influenza in Dunedin.—It is claimed by Champtaloup and Drennan that inoculation with a vaccine composed of the chief causative organisms may or may not protect against infection. The length of the immunity conferred is doubtful. It is probably short. To effect a cure the vaccine is practically proved to be of extreme value in controlling the disease and limiting complications. The first dose (80 to 100 millions of mixed vaccine) is given as soon as possible, 400 millions seven days later, and another dose three days later, if all goes well. In severe cases larger doses are given intravenously. For the rest, the treatment is symptomatic.

The Blood in Influenza.—Maestrini refers to the blood during influenzal bronchopneumonia. The serum seemed to have completely lost the faculty of precipitating colloidal silver. In influenza without pneumonia the blood behaves like normal blood in this respect. It is possible that the electric charge is responsible, as colloidal silver has a negative electric charge. It is precipitated by normal human serum, adding 20 or 30 drops of the serum to 10 c.c. of a 1:500 aqueous solution of the silver salt.

Riforma Medica, Naples

Jan. 4, 1919, **35**, No. 1

*Adhesive Tuberculous Pericarditis. A. Cardarelli.—p. 2.
Influenza Among Factory Workers. E. Tedeschi.—p. 4.
*Plastic Motor Operations. A. Pellegrini.—p. 6.
The Sanitary Problems of Aviation. G. Gradenigo.—p. 8.
The Roentgen Rays in Ophthalmology. N. Scalinci.—p. 10.
The Metabolism of the Amino-Acids. A. Azzi.—p. 11.

Tuberculous Pericarditis.—Cardarelli based his diagnosis in the case described on the enlargement of the liver and tracheobronchial glands, the cyanosis and the edema in the legs. These features of the case testified to impeded return of the venous blood to the heart. There was no murmur or effusion, and the rhythm was normal, consequently this seemed to exclude all forms of heart disease except adhesion of the sheets of the pericardium. This explained the extreme enlargement of the liver but there was no history of rheumatism in the case. The enlarged tracheobronchial, axillary and inguinal glands and bilateral pleurisy with effusion stamped the heart disease as probably tuberculous, although the tuberculin test was negative and there was no fever or loss of flesh. The lymphatics provide an easy path for spread of a tuberculous pleural infection to the pericardium. It has been his experience that in these cases of adherent pericarditis the heart displays a tendency to shrivel when the trouble is of tuberculous origin, while it tends to become hypertrophied when due to rheumatism. The latter injures the valves and sets up a further vicious circle, all of which is lacking in the tuberculous form. In the case described he gave no heart tonic but only purgatives and diuretics. This reduced the blood pressure, greatly relieving the patient, the cyanosis subsiding almost completely, and the condition keeping fairly good under repose and a light diet, but a cure cannot be anticipated.

Vitalization of Artificial Limbs.—Pellegrini now has a record of twenty-seven plastic motor operations, and he has compiled seventy-eight others from Italian literature. His own primary cinematic amputations include one "key" plastic motor operation, twenty "loop" operations and one with "key" plus "loop." In three cases the outcome was not satisfactory, but in all the others the cinematization was a success. The lifting power of the motors thus provided ranged from 15 kg. cm. to 50 kg. cm., and is still increasing so that 100 kg. cm. is anticipated in the near future. His experience teaches the advantages of a "loop" over a "key"; of lateral rather than terminal motors; of alternating instead of single motors, and the superiority of skin bridge flaps over pedunculated flaps.

Rivista di Clinica Pediatrica, Florence

December, 1918, **16**, No. 12

*Malignant Tumor in Child Kidney: Three Cases. F. Rossi.—p. 617.

Malignant Tumors of the Child Kidney.—Rossi reviews the literature on this subject and reports three cases. There are recur- only a few instances of operative cures on record and rence is frequent, but an operation is the only means of possible relief and the success in one of his cases justifies high hopes with radical intervention. In one of the cases on record the tumor compressed the ureter from the other kidney, inducing hydronephrosis in this, and the urine from the sound kidney found its outlet through the sarcomatous kidney, the ureter from this being still permeable. Enlarge- ment of the kidney is always the first symptom of the malig- nant disease in children. Hematuria is not always present, and pain is an unreliable element in the differential diagnosis. His first two cases were in children of 2; one was inoperable, but the other child recovered and seems still in perfect health, eight years since the nephrectomy. The tumor was a round cell sarcoma, weighing 600 gm. The child had been apparently healthy until two months before the operation. He removed the tumor likewise in the third patient, a girl of 8, and the child seems well but the interval since has been too short for the ultimate outcome to be known. In deciding whether the tumor was in the kidney or spleen he found instructive the appearance of a zone of resonance in front of the tumor when the intestine was inflated. This resonance is not encountered with a tumor in the spleen. A tumor in the intestine or mesentery generally runs a very rapid course, entailing cachexia early. Such tumors also are extremely movable while a tumor in the pancreas is not movable. A conglomerate of tuberculous glands might prove misleading, but almost invariably tumefied glands or other symptoms elsewhere would give the clue. A congenital cystic kidney may also simulate a malignant tumor. In a case of this kind, a hard elastic tumor in the kidney region, movable with respiration but without fremitus or resonance in front, without eosinophilia, the blood pictures and urine normal, was shown by exploratory puncture to be a cystic tumor implanted on the large right kidney. The left kidney was missing. Smooth recovery followed excision of the tumor.

Tumori, Rome

July-September, 1918, **6**, No. 3

*Diet to Promote Retrogression of Tumors. E. Centanni.—p. 153.
*Myomatous Tumors of Stomach. F. Nassetti.—p. 172. Conc'n.

Dietetic Treatment of Cancer.—Centanni's article was summarized in The Journal, Oct. 26, 1918, p. 1446, when published elsewhere. As stated in the abstract then, he declares that the results realized by his experiments constitute the most definite that have been accomplished by modern cancer research to date. He reiterates further that there are always two factors involved in malignant disease, the special local anomaly, which imparts to the cells the capacity for tumultuous multiplication, and the lack of adequate defensive forces which normally would check any such tendency to unbridled proliferation. From this point of view, cancer may be classed as a constitutional disease. The constitutional defect is revealed by the inability to curb the tumor growth. In his dietetic experiments he aimed to suppress from the food or denature by excessive heating only those elements which promote growth. He removed the larger part of the tumor and then, under the dietetic restrictions, what was left of the tumor gradually atrophied instead of developing recurrence as otherwise would occur. As Ehrlich said, the fate of a tumor is determined by the differential of reciprocal nutritive avidity between the cells of the tumor and the other cells of the organism. This differential is extremely variable but, in any event, tonics and strengthening diets, especially milk, act in malignant disease like throwing oil on the fire. The human organism is peculiarly susceptible to dietetic deficiencies, and this promises well for dietetic influencing of cancers, especially when supplemented with other growth-depressing agencies.

Myoma of the Stomach.—Nassetti found among 140 myomatous gastric tumors on record, 58 simple myomas and 37 fibromyomas, 6 adenomyomas and 1 myxomyoma. All the others were of a mixed sarcomatous nature except 9 listed as malignant myoma. The clinical and histologic findings in each group are reviewed, with twelve plates of illustrations. Operative treatment is the only rational measure; in 40 operative cases tabulated from the literature the tumor was in the submucosa in 8 of the cases. One death is recorded in this group and in 9 in the subserosa cases. Pneumonia or embolism was responsible for at least 4 of these 10 fatalities. He gives colored plates of 2 large pedunculated myosarcomas growing from the outside of the stomach. Four pages of bibliography are appended.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

December, 1918, **1**, No. 12

Mineral Waters and Spa Treatment in Stomach Disease. R. Pinilla. —p. 561.
Operative Treatment of Gastric Ulcer. R. Lozano.—p. 567.
Chamomile in Therapeutics. V. de Castro—p. 577.

Medicina Ibera, Madrid

Dec. 7, 1918, 5, No. 57

*Influence of Influenza on Pulmonary Tuberculosis. Triviño.—p. 233.
Solution of Chlorinated Soda in Otology. A. A. Ramos.—p. 235.

Dec. 14, 1918, 5, No. 58

*Influenza. R. Velasco.—p. 261.
*Radiologic Findings with Duodenal Ulcer. S. Carro.—p. 263.
Transcendental Psychology. A. S. Herrero.—p. 265.

Dec. 21, 1918, 5, No. 59

General Principles for Examination of the Eye. J. Gonzales.—p. 289.
Conception and Limits of Degeneration in Psychiatry. R. A. G. Salazar.—p. 292.
Syphilitic Myocarditis. G. Triviño.—p. 295.

Dec. 28, 1918, 5, No. 60

*Spasm of Muscles of Orbit. J. M. Villaverde.—p. 317.
Milk as Vehicle for Iodin. A. S. Alvarez.—p. 322.
Ulceration from Vascular Lesions. Sicilia.—p. 325.

Influence of Influenza on Pulmonary Tuberculosis.—Triviño remarks that among the applicants at the dispensary in his charge there were last year 160 with pulmonary tuberculosis. Influenza had an unmistakably unfavorable action on many with "closed" tuberculosis, tubercle bacilli appearing in the sputum afterward. Chronic cases, however, did not seem to be influenced. An exceptionally large number of new patients with pulmonary tuberculosis are applying to the dispensary of late, all referring the onset of their disease to the period of epidemic influenza last spring. Most of them affirm that they were healthy until then.

Influenza.—Velasco reports two cases in which influenza deceptively simulated acute appendicitis. One of the patients died in forty-eight hours, the symptoms suggesting peritonitis. In several other cases there were absolutely no symptoms of influenza except moderate fever and delirium. Acute mania would have been the diagnosis if it had not been for the fever. In one lad of 17 the influenza passed through several phases, first a chill and severe intestinal hemorrhage, then a calm followed by symptoms of pneumonia, with subsidence of all symptoms the fifth day. Three days later the temperature ran up again, and the digestive apparatus was the storm center for two weeks. Then came a week of calm and normal temperature, and then a new phase of pneumonia, with final recovery. Calcium chlorid for the hemorrhage and diphtheria antitoxin were the main reliance in treatment, besides physical measures.

Radiologic Diagnosis of Duodenal Ulcer.—Carro regards as of diagnostic import the sagging of the pylorus, tenderness in the duodenal region, and increased gastric peristalsis. He has diagnosed a duodenal ulcer in many cases, confirmed later, in which there was nothing in the roentgen picture to suggest such a process. On the other hand, the roentgen rays have sometimes corrected his mistaken diagnosis of some affection other than duodenal ulcer.

Spasm of the Muscles of the Eyelids and Back of Neck.—Villaverde has been unable to find on record a case similar to the one he describes. An isolated spasm of the orbicularis palpebrarum compels the man of 59 to throw his head back in order to see, and the consequence of this is a spasm of the muscles of the back of the neck. The other muscles innervated by the facialis seem normal.

Prensa Medica Argentina, Buenos Aires

Dec. 20, 1918, **5**, No. 20

*Clamps in Surgery. E. Finochietto.—p. 197. Cont'n.
*Projectile in Centrum Semiovale. R. Solé.—p. 199.
*Case of Lymphadenoma of the Mediastinum. R. Lopez and J. B. Mendy.—p. 201.
*Typhoidin Reaction in Typhoid. S. Mazza.—p. 203.

Dec. 30, 1918, **5**, No. 21

Exanthem with Influenza. A. H. Roffo.—p. 205.
*The Brain with Senile Dementia. N. Rojas.—p. 207.
*Hexamethylenamin by the Vein in Typhoid. L. Ymaz and L. Ayerza. —p. 215.

Clamps in Surgery.—Finochietto's long continued article has reached its sixty-first illustration of various modern devices for clamping, tying knots, crushing, etc.

Projectile in the Corona Radiata.—Solé noticed that the left arm did not show signs of paralysis until the twentieth day after the man had been shot from above in the right frontal region. There was no tendency to spasmodic contraction but the left leg dragged a little. The projectile was shown by the roentgen rays to be in the corona radiata, 2 or 3 cm. from the cortex, near the fissure of Sylvius. As the symptoms had been so long in developing and as they manifested a progressive course, the bullet was removed. It was reached through an incision in the cortex just above the fissure of Sylvius, close to the avascular edge of the circumvolution. The incision was 3 cm. long and 1 cm. deep and with a fine probe the bullet was located toward the center of the base of the brain, at a depth of 5 cm., by the resistance to the probe. There was not the expected click, as the bullet was found partly covered with adherent tissue. He did not attempt to suture the dura mater. The operation was done under local anesthesia and the patient answered questions without complaint of much discomfort. The previously lax monoplegia changed to spastic temporarily. There was no complaint of headache but vomiting kept up for three days. Then a change was made from fluid food to a thick tapioca dish and the vomiting stopped at once. The paralysis of the arm progressively subsided, the man being now able to raise his hand to his head and the strength returning to his arm, but the facial paralysis still persists.

Malignant Tumor in Mediastinum.—In Lopez' case the woman of 35, previously healthy, suddenly developed dyspnea and vascular disturbance with subdulness presternal and at the base of the right lung. The assumption of cancer was confirmed by necropsy within two months. The rapidly fatal lymphadenoma had not involved the other glands in the mediastinum.

Typhoidin in Diagnosis of Typhoid.—Mazza's experience with this reaction failed to demonstrate any diagnostic value for it.

The Brain with Senile Dementia.—Rojas reproduces the microscopic findings in brains with senile dementia.

Hexamethylenamin by the Vein in Typhoid.—Ymaz and Ayerza in this instalment of their article state that a physiologically isotonic solution is made of hexamethylenamin by dissolving it in a 4 per thousand salt solution. The preferable concentration seems to be a 30 per cent. solution in the 4 per thousand saline. If heated too much the solution becomes hemolytic, but this does not occur when heated merely to 70 C. for three hours in all, an hour at a time.

Repertorio de Medicina y Cirugia, Bogotá

December, 1918, **10**, No. 3

Influenza in Colombia. J. M. Montoya.—p. 113.
*Reconstruction of Urethra with Saphenous Vein. Z. C. Duran.—p. 116.
*Scarlet Fever at Bogotá. J. del C. Acosta.—p. 139.

Reconstruction of Urethra with Saphenous Vein.—Duran was impressed by the advantages of this plastic operation as successfully done by Legueu in 1916. Duran has applied the method himself in two cases, the success in one equalling that realized by Legueu. He has been unable to find any records of other successful operations of the kind, so he thinks that his case should rank as the second. The patient had several fistulas in the perineum, relics of urinary abscesses from stricture of gonorrheal origin. There was a gap of 1.5 cm. in the urethra after resection of the strictures. After dilating the stumps of the urethra and isolating these stumps, he resected a segment, 8 cm. long, in the saphenous vein in the triangle of Scarpa. This segment was then drawn over a bougie and placed in a jar with tepid Hayem artificial serum. Then it was implanted in a tunnel made out of the tissues of the perineum, drawing the skin up over it, instead of boring a tunnel with a trocar as Legueu does. In other respects he followed the latter's technic exactly. In his second case preexisting cystitis and fistulas, with enlarged prostate and incontinence, necessitated long preparation for the plastic operation, but it proved a complete success at last although supplementary urethrotomy had been required. It is the first time that a urethrotomy has been done on the urethra made from the saphenous vein. In this case the segment of vein was found narrower than expected, and it had to be well stretched before it could be used. There were also three anastomoses which had to be ligated when the 12 cm. segment was resected. In spite of these drawbacks, the reconstructed urethra is a complete success, no fistula being left, although the slight preexisting incontinence still persists.

Scarlet Fever in Bogotá.—Acosta warns that scarlet fever is becoming more common in Bogotá where it used to be very rare and appear in mild, incomplete forms. The cases seem to be growing more frequent and the type more severe. In dubious cases, the diagnosis is facilitated, he says, by the presence of bile pigment and Bence-Jones albumose in the urine. The albumose is abundant during the first two or three days but gradually disappears by the fifth or sixth day. It is a simple matter to determine its presence as it is precipitated by nitric acid, cold, and dissolves anew on heating. By pouring carefully the filtered urine on a little nitric acid, not allowing them to mix, the green ring characteristic of bile pigment forms and below it the yellowish white precipitate. The latter disappears on heating the tube but forms anew as it cools. Acosta does not know whether the albumose which he found constantly in scarlet fever occurs in other diseases. Strict isolation is imperative, and the easiest way to realize this is by sending the other children away from the home. The isolation should be kept up for five weeks after the febrile period; some say for seven weeks.

Revista de Medicina y Cirugia, Havana

Jan. 10, 1919, **24**, No. 1

*Repeated Tubal Pregnancy. E. Chávez.—p. 1.
*History of Hygiene in Argentina. J. S. Fernández.—p. 9.

Repeated Tubal Abortion.—Chávez operated in 1916 for a ruptured two-month tubal pregnancy with severe symptoms. Both right tube and ovary were resected. Two years later the same clinical picture was presented anew, and the left tube was removed, leaving the ovary.

History of Hygiene in Argentina.—The text for Santos Fernández' remarks is the autobiography of Dr. E. R. Coni, which the Asociacion Medica Argentina has recently published as the first volume to appear in its Biblioteca Medica Argentina. It has been published in serial form in the *Revista* of the association, and, as already mentioned in these columns, forms the history of efforts for hygiene and public health in Latin America but especially in Argentina, where Coni has been a leader in all such movements since 1867.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 7, 1919, **122**, No. 1537

*Postinfluenzal Psychoses. E. F. Sanz.—p. 5.
*Acute Dilatation of Heart Consecutive to Trauma. U. Sarachaga.—p. 11.

Influenzal Psychoses.—Sanz' three patients with postinfluenzal psychoses were women between 22 and 34, inclined to nervousness or hyperemotionalism. The influenza was quite mild in two of the cases, lasting only three days. In one the psychosis was of the type of acute melancholia with suicidal tendency and refusal to eat. This patient had not recovered from excessive hemorrhages at a childbirth three months before. He ordered isolation and sedatives, giving a favorable prognosis. The cases demonstrate anew the importance of predisposing factors in such cases.

Acute Traumatic Dilatation of the Heart.—In the case described by Sarachaga the man of 40 fell from a height but was caught on a projection which he hit with his chest and hung suspended until rescued. The fright, contusion of the chest and the muscular effort of clinging to the support were followed by acute dilatation of the heart, with edema. Under digitalis the symptoms gradually subsided and by the seventeenth day normal conditions had apparently been restored. There have been no further signs of disturbance during the three months since to date. This complete recovery and the fact that the symptoms did not appear until forty-eight hours after the accident exclude a valvular lesion. The prognosis in such cases depends on the muscular force of the heart rather than on the degree of dilatation.

Semana Medica, Buenos Aires

Nov. 21, 1918, **25**, No. 47

*Alkalinity of Blood. P. J. Pando.—p. 595.
*Foundlings and Other Child Wards of the State. S. M. Paez.—p. 601.
Suspensory for Orchi-Epididymitis. G. V. Moran.—p. 607.
*Sodium Hyposulphite in Respiratory Disease. A. Iarcho.—p. 611.
Plastic Motor Surgery. G. B. Arana.—p. 612.

Nov. 28, 1918, **25**, No. 48

Lectures Outside of Regular Courses. (La docencia libre.) R. A. Bullrich.—p. 619; G. A. Alfaro.—p. 632; R. A. Bullrich, No. 49, p. 659.
*Public Health Legislation in Peru. J. Penna.—p. 622.
The Antituberculosis League of Rosario. C. Alvarez.—p. 629.
The Uruguayan Antituberculosis League. E. R. Coni.—p. 638.
Intestinal Trichomonosis. E. Escomel.—p. 649.
Sexuality and Psychoneuroses. A. Austregésilo.—p. 653.

Dec. 5, 1918, **25**, No. 49

*Congenital Nephritis. J. Dutrey and V. Widakovich.—p. 661.
Nomenclature of Tuberculosis. S. De Madrid.—p. 664.
*Symphysiotomy versus Pubiotomy. T. A. Chamorro.—p. 666. Conc'n.
*Needle in Uterus. J. Diez.—p. 689.
*Leprosy. E. R. Coni.—p. 692.
Influenza Death Rate. E. R. Coni.—p. 694.
Atypical Tuberculosis. S. De Madrid.—p. 695.

Alkalinity of the Blood.—Pando remarks that the alkalinity of the blood cannot be determined in the same way as with the other fluids of the organism because its red color masks the reaction in the change of tint. He discusses the various causes that may interfere with the reliability of the findings with various tests, and declares that the acidity of the distilled water used in the tests may have considerable bearing on the findings. Another source of error is the loss of alkalinity depending on the time the blood has been outside of the blood vessels, from the biochemical action of its diastases and enzymes. Distilled water always gives an acid reaction on account of the carbon dioxid present. The test method he describes in detail is based on the acidification of a given quantity of blood by means of a 200 normal solution of sulphuric acid in presence of neutral sodium citrate, estimating, by means of a 200 normal solution of sodium hydroxid, the excess of sulphuric acid which has not combined with the alkaline principles of the blood. He says that with a minute amount of blood this method is simple and easy although indirect.

Protection of Foundlings.—Paez gives a historical sketch of what has been done in the Argentine Republic to care for abandoned children. The first institution, the Casa de Expósitos, dates from 1779.

Sodium Hyposulphite in Respiratory Diseases.—Iarcho deplores the neglect of this drug which has been so highly commended by Huchard, Ayerza and others. He has used it himself on a large scale in the public hospital, and has been much impressed by its beneficial influence on cough and expectoration, and the improvement in the purulent sputum. He says that it is notoxic and has no by-effects except possibly a slightly laxative action in the sensitive. The usual dose is 2.5 or 3 gm. a day, or 1 gm. for children of 5. He gives it in hot, slightly sweetened, water. It is incompatible with acids, salts and especially the salts of lead, silver, mercury and iodin.

Sanitary Legislation in Peru.—Penna's article is the introduction to a book on the medicosocial bases of sanitary legislation in Peru, by Dr. Carlos Enrique Paz Soldan of Lima, director of the monthly, *Reforma Medica.*

Congenital Nephritis.—Dutrey and Widakovich report the case of a prematurely born child of a woman who had 1.50 gm. per thousand albumin in the urine. Delivery was spontaneous, but the placenta weighed 1,950 gm. while the child weighed only 1,700 gm. There was general edema of the cord and membranes and of the entire fetus. Lesions were found in the kidneys of the child indicating chronic nephritis, and this nephritis in the child evidently had cooperated in the production of the edema. There was nothing to suggest syphilis in mother or child. They know of only two other cases on record of congenital fetal nephritis, theirs being the third case to be published in accessible literature. In Sitzenfrei's case, the nephritis in the fetus was evidently acute.

Symphysiotomy Versus Pubiotomy.—Chamorro here concludes his long monograph on this subject, based on extensive clinical experience. He analyzes the advantages and disadvantages of each of these operations, his verdict being all in favor of symphysiotomy, for numerous reasons. The mishaps and their gravity are much less than with pubiotomy, and the puerperium is comparatively normal. There can be no clinical and surgical parallel between them, he reiterates. Symphysiotomy, done subcutaneously, may almost be called physiologic, as he shows by the case histories in full of thirty-nine cases in which one of these operations was performed at Buenos Aires, including eight personal cases. Considerable bibliography is appended, the list containing titles of forty-five articles or works on the subject that have been published in Argentina by thirty-one different writers.

Fibromatous Uterus with Foreign Body.—Diez removed the uterus on account of fibromatous changes and found an ordinary sewing needle embedded in the cervical tissue. The irritation from this may have been responsible for the extreme degree of fibromatous degeneration.

Prophylaxis of Leprosy.—Coni protests decidedly against the plan of segregating lepers on remote islands. It is far better, he argues, to have an accessible colony for lepers where they can see their friends and relatives occasionally. Agricultural colonies give them occupation and make their lot as bearable as possible. He appeals to the legislature to provide for compulsory declaration of leprosy. No census has ever been taken of the lepers in Argentina.

Siglo Medico, Madrid

Oct. 26, 1918, **65**, No. 3385.

Surgery of Urinary Apparatus. R. Mollá.—p. 873.
*Historical Fees. J. M. A. Sanz.—p. 876.
Treatment of Epilepsy. A. Sanchez-Herrero.—p. 879.

Dec. 7, 1918, **65**, No. 3391

*Present Status of the Problem of Epidemic Cerebrospinal Meningitis. G. Marañón and A. Ruiz y Falco.—p. 993. Commenced in No. 3388.—p. 933.
*Treatment of Felon. Sicilia.—p. 1000.

Dec. 14, 1918, **65**, No. 3392

*Crasiology. C. Calleja.—p. 1013. Concluded in No. 3396, p. 22.

Historical Fees.—Sanz reviews the history of large fees, beginning with that paid by the king Antiochus, 300 B. C., to the physician Erasistratus of Alexandria. He is said to have received a sum equal to 600,000 pesetas, about $120,000. Dubois received $20,000 and the title of baron for attending the wife of Napoleon. The latter declared that he did not believe in physicians, but he averaged over $40,000 a year paid to doctors, dentists, and chiropodists. Sanz describes the public health officials in the towns of the Romans, saying that they were officially organized and passed on the credentials of those wishing to practice medicine. A fine of 2,000 *drachmas* was imposed on those practicing without the official approval of these official *archiaters*. They were exempt from military duty and taxes,and had certain other privileges. The Visigoths continued some of these regulations and added others, one decreeing that if the physician's patient died, the physician could not collect any fee. Coming down to modern times, Sanz remarks that an American trust magnate or a Mexican cotton king now pays for medical attendance twenty times more than the kings and popes of the past, even though the Roman physician Crina left an inheritance of 10 millions *sestertii*.

Present Status of Epidemic Meningitis.—Marañon concludes his study of meningitis by urging isolation and treatment of germ carriers. They must be sought in those surrounding the patient, but it is impossible to isolate them all, which would be the ideal. At least they can be warned to keep away from other persons as much as possible, and especially from children, and be taught to disinfect the throat repeatedly. In schools and barracks, the carriers must be scrupulously isolated. Preventive vaccination is said to have given good results in a few cases, and this is certainly promising for the future. Serotherapy must be with large doses. In one of his cases he injected 120 c.c. of the antiserum in the course of five days. In very severe cases he has good results from rinsing out the spinal cavity. At first 50 or 60 c.c. of spinal fluid is withdrawn and then the same amount of saline is injected through the same needle. The foot of the bed is then raised for two or three minutes, and again 50 or 60 c.c. of fluid is withdrawn, reinjecting an equal amount of saline. After thus rinsing out the spinal cavity, the antimeningococcus serum is injected and left. Rosenthal recently advised using two needles, a large and a small, for continuous lavage. In most cases marked improvement followed. When the ventricle has to be punctured, the meningitis having become walled off, this will be found easier in children. The mortality was 78 per cent. in the thirty-three cases he has found on record in recent literature. He reviews the entire field of treatment, and warns to be on the alert to ward off bed sores. After the first two or three days the patient can begin to eat milk, eggs, purées and so forth, even although the temperature may still be high.

Treatment of Felon.—Sicilia emphasizes that a felon is by no means a harmless thing, and urges extremely vigorous measures. He has attained the best results with tincture of iodin, cauterizing occasionally with zinc chlorid or copper sulphate, removing the dead bone if necessary. In one case a cure was realized only after the entire arsenal of measures had been applied, including staphylococcus vaccine.

Constitutional Predisposition to Disease.—Calleja uses the term crasiology to denote the congenital predisposition to disease. The organic constitution, the true crasis, is always morbid, and is different in each individual. No one has an absolutely perfect constitution. He thinks there is a vast field here for research on ways and means to improve the constitution of individuals. Physicians should be trained as "crasiologists," as he thinks that in the near future this will be a principal part of medicine instead of the subordinate place it occupies at present.

Nederlandsch Tijdschrift v. Geneesk., Amsterdam

Jan. 5, 1918, **1**, No. 1

Sporotrichosis in Netherlands Indies. K. B. M. Ten Brink.—p. 5.
*Spectroscopy in Determination of Occult Blood. I. Snapper.—p. 10.
Familial European Chyluria. J. Koopman.—p. 19.
Case of Morphin Poisoning. W. H. A. van Os.—p. 23.

July 6, 1918, **2**, No. 1

*Psychopathology and Crime. E. J. Swaep.—p. 9.
Ultimate Outcome of Fracture of the Leg. W. F. Wassink.—p. 19.
*Typhoid Bacilli Carriers. H. Aldershoff.—p. 37.

Occult Blood in the Spectroscope.—The first issue of this exchange for 1918 and the number for July 6 were received Feb. 13, 1919. Snapper expatiates on the importance of spectroscopy for determining the presence of occult blood in the stools. He declares that this is so important that no one should hesitate to acquire a spectroscope and perfect himself in its use. The color reactions are not dependable, peroxidases in the absence of blood being liable to give positive reactions, while the blood may be absorbed in the intestinal canal and none reach the anus or be eliminated in a porphyrin combination. With the spectroscope we have two means of determining the presence of blood, the spectrum for hemochromogen and the spectrum for porphyrin. When the blood is eliminated in the form of a combination of porphyrin, it does not respond to any of the color tests for occult blood. All the hemoglobin may be transformed into this hematoporphyrin combination, even when there may be considerable blood in the digestive tract.

Psychopathology and Crime.—Swaep's article was the presidential address opening the sixty-ninth annual meeting of the Netherlands Medical Association. He expatiated on the importance of the connection between psychopathology and crime and its relation to the future of the race, saying that progress in hygiene and in medicine has led to survival of many mentally and physically substandard individuals, and their offspring present many problems, financial and others. "But no backward step in this line is even thinkable. The love for our neighbor is the physicians' best possession, recognizing no frontiers or nationalities.. But although we hold this love for our neighbor sacred, yet we are also justified in listening to the dictates of common sense, if only this voice of our reason rings out true and clear, if only our ideas are pondered well and a hundred times tested. Nowadays the problem of hereditary transmission is at the zenith of interest. Everywhere we meet it, in the study of character, of mental and organic disease, in degeneracy, etc. We know more now than ever before of hybridization, of correlations, of dominant and recessive characteristics. Love is no longer a matter that concerns two persons alone; instead of a *Sache von Zweien* it has become a *Sache von Dreien*. To a certain extent we are bound to what we brought into the world with us. All this knowledge has brought the idea of purifying the race. But it is still too early to think of actively interfering. We have no right, either, to apply here the laws discovered elsewhere. Many persons living honest lives may have a latent tendency to criminality as a recessive characteristic. In order to stamp out criminality completely, these persons would have to be included in the repressive measures. In seeking to prevent hereditary transmission of insanity, the only effectual means would be to prevent reproduction of the family strain not only by the inmates of the asylums but by the relatives that come to visit them. Our duty now is to study these questions. How these strains rise and decline, how the lives of the genius, the average man, the martyr and the criminal differ, and how these are linked together by the bonds of heredity—all this should be recorded over long genealogic periods, in biographies and statistics, before the human hand should interfere. To a large extent this task rests on the medical profession. What finer prospect can be imagined than from the partial records of the many to build up on broad, scientifically accurate foundations a grand work which will point the way to improve the welfare and the character of the race." He added that a society for such research was founded a few years ago in Holland, the Nederlandsch Volk, and Heijmans and Wiersma, among others, have made valuable contributions in this line.

Typhoid Bacilli Carriers.—Aldershoff is public health inspector at Utrecht, and he concludes his dissertation on the subject of healthy typhoid bacilli carriers by emphasizing that the problem is merely one of cleanliness. It is impossible to isolate them all, and a scrupulously careful and cleanly carrier is no danger to his or her ordinary environment. The essential point in prophylaxis is detection of all cases of typhoid in the earliest possible phase and removal to a hospital. Notification of even the suspicious cases should be compulsory, without waiting for certainty. All the vast literature on typhoid carriers and the conclusions, when it has been sought to apply them in practice, have resolved themselves into merely the old laws of hygiene.

Hospitalstidende, Copenhagen

Dec. 4, 1918, **61**, No. 49

*Types of Tubercle Bacilli found in Tuberculous Skin Lesions, especially in Lupus. C. W. Anderson.—p. 1689. Commenced No. 44, p. 1521.
Present Status of Deep Roentgen Treatment. H. J. Panner.—p. 1699.

Types of Tubercle Bacilli Found in Lupus and Other Tuberculous Skin Lesions.—Andersen's experimental research demonstrated in 3 of 30 cases of lupus that the bovine tubercle bacillus seemed to be responsible for the lesions. In 9 the bacilli were of the typical human type; in the others they seemed more or less atypical human tubercle bacilli, except in 4 cases in which he was unable to cultivate tubercle bacilli from the lesions. His research was done on 72 guinea-pigs, 141 rabbits, 7 calves and 4 fowls. Inoculation of the guinea-pigs elicited a positive response in all but 3. These 3 responded to the lupus bacilli as to the bacilli of fowl tuberculosis, but fowls inoculated with the same bacilli did not sicken.

Ugeskrift for Læger, Copenhagen

Dec. 26, 1918, **80**, No. 52

*Hydatidiform Mole with Ovarian Cysts. J. Nordentoft.—p. 2139.
Herman Boerhaave, 1668-1918. J. W. S. Johnsson.—p. 2144.

Jan. 2, 1919, **81**, No. 1

*Habitual Constipation, VIII. T. E. H. Thaysen.—p. 4.

The Ovaries with Hydatidiform Mole.—In Nordentoft's case the woman of 35 had borne three children. There was an interval of three years since the last pregnancy, but recently there had been no menstruation and a tendency to nausea and vomiting had convinced the woman that she was three months' pregnant. Then came severe hemorrhage by the vagina and the uterus seemed to be of a size corresponding to a six months' pregnancy. A large mole was found and the uterus curetted. A tumor rapidly developed thereafter on each ovary. On the left ovary the cystic tumor was 15 cm. long, with a base 8 cm. broad; on the right ovary the tumor was smaller, but both were of cystic structure, filled with a fluid, gelatinous mass similar to the contents of the mole. The uterus itself also showed suspicious patches so that supravaginal amputation seemed advisable. The patient has been in good health during the months since to date. The ovarian tumors had probably existed at the time of the operation on the mole, but their rapid growth, that could be followed with the eye and palpation; within less than a week, was most striking. In six other cases of mole given operative treatment at the same hospital, the women were from 20 to 46 years old; four of the women had borne several children, one only one child, and one was pregnant for the first time. Four have borne healthy children since; one woman died several months later of a pulmonary lesion which may have been metastasis from the mole, and one succumbed to sepsis consecutive to the operation.

Habitual Constipation.—Thaysen discusses the diagnosis, etiology and treatment of chronic habitual constipation, this being his eighth communication on the clinical and roentgenologic aspects of constipation. He defines it as primary, habitual; secondary, symptomatic; and the constipation which is a complication of other lesions. He affirms that the large majority of cases of chronic constipation developing between the ages of 26 (women) or 31 (men) and the age of 50 are of the symptomatic type. This symptomatic form differs materially from the type of habitual constipation, both in the stools and in its clinical course. Habitual—primary—constipation is due to abnormal weakness or abnormal activity of the nervous motor apparatus of the lower bowel; it usually begins before the age of 26 in women and 31 in men. It runs a chronic course with occasional remissions and marked tendency to recurrence, and a hereditary tendency is often manifest. This latter tendency may be indirect, from congenital abnormal conditions in the ductless glands or a congenital overcomplete digestion. Cooperating elements may be lack of hygiene or nervous, medicinal or mechanical factors. He analyzes each of these possible factors in turn and the means to combat them. Ptosis is extremely rarely to be incriminated for constipation in men, but habitual constipation developing between 15 and 20 is as common in males as in females, namely, in 29 and 31 per cent. This, he thinks, disproves the importance of ptosis as a factor. Fully 38 per cent. of all cases of habitual constipation in women begin within the fifteenth year. Excluding from the remaining 62 per cent. the 37 per cent. which are traceable to what he calls rectum constipation, only 25 per cent. are left for which ptosis can possibly be incriminated. These percentages are from his own clinical experience. Of the twenty-three women who formed the 25 per cent. thus left over, only four presented gastroptosis, that is, less than 5 per cent. of the total material. Hence the assumption of kinking of the bowel from gastroptosis as the cause of chronic constipation can apply only to less than 5 per cent. All his experience seems to discredit kinking at the flexure as much of a factor in the genesis of chronic constipation. When there is actual stenosis from a kink or other cause, ileus results in time, while with habitual constipation this occurs extremely seldom, only when there is obstruction from a fecal stone or spasmodic contraction. It is impossible to explain with a mechanical cause for the constipation the frequent remissions which occur in the course of habitual constipation, even of many years' standing. It is a well known fact that the latter may disappear for a time during a trip to the country, or other traveling or under emotional stress. In concluding this instalment of his work, Thaysen remarks that in examining twenty healthy women and twenty healthy men, he found the transverse colon 10 cm. or more below the umbilicus in 20 per cent. of the men and in 50 per cent. of the women, although the position of the stomach was normal in all. He also found that the position of the colon may vary by 8 cm. from day to day.

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THORACIC INJURIES

REPORT OF CASES TREATED BY SURGICAL TEAM 39 AT EVACUATION HOSPITAL NO. 8 FROM SEPT. 6 TO OCT. 25, 1918

HOWARD LILIENTHAL, M.D. (New York)
Lieutenant-Colonel, M. C., U. S. Army; Chief, Surgical Team No. 39

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AND

W. A. KELLOGG, M.D. (New York)
Captain, M. C., U. S. Army

FRANCE

During the forty-nine days of our stay at Evacuation Hospital No. 8, the team treated 250 patients and performed a total of 340 operations, as contained in report dated Nov. 5, 1918.

There were sixty-seven cases of thoracic injuries, or about 27 per cent. of the whole number of wounded. This high percentage is explained by the fact that Team 39 was assigned the greater number of this class of cases. A number of others not in our list were sent to one of us (H. L.) in consultation, and in most of these, for example, cases of severe fracture of the skull complicated by thoracic wounds, operations on the chest were not performed.

CONDITIONS

The hospital operating room and its accessory departments, preparation, shock, roentgen-ray, etc., were well equipped and excellently managed by Major Arthur Shipley under Colonel Hall, commanding officer. Asepsis was as perfect as could be expected under the circumstances.

Under the plan of the institution there could be no segregation of the different classes of patients at operation; accordingly operation in the malignant gas gangrene cases was necessarily performed in the same room with others that might be clean or at most only under suspicion. Since there were so many of the latter class, however, the actual infection of wounds by the discharges from other patients could not be traced. Also, the proportion of those known to be aseptic at the time of operation which became infected afterward must have been almost negligible. It is believed, however, that the important class of abdominal and thoracic injuries might have been treated to better advantage had there been a special operating room equipped for the purpose.

CONDITION OF PATIENTS ON ADMISSION

Most of the patients arrived within twenty-four hours after being wounded. The shortest period was about four hours, and the longest six days, the latter interval occurring in the case of a German prisoner with two sucking wounds. He stated that he had not eaten during this entire time. He died a few hours after an operation under local anesthesia to close the thorax. About one third of the patients (twenty of the sixty-seven) were in shock on admission, and either had to be treated in the shock ward for from several hours to two days before operation, or the operative treatment, when urgent, had to be modified to suit the case.

A certain degree of vital depression, not perhaps amounting to actual shock, was present in nearly all of our patients, and it is believed that this element of depression caused by fatigue, both mental and physical, by hemorrhage, by hunger and thirst and by exposure, was responsible for that general state which surgeons mean to designate when they use the expression "poor risk."

It was this matter of "poor risk" that caused us to abandon early the idea of attempting to extract every foreign body merely because the immediate operation would probably be easier than it would be later when deforming adhesions and embarrassing exudates would add to the technical difficulties. We therefore reserved the free exploration of the thoracic cavity (described under "Operative Procedures") for those cases in which the foreign body had done such severe damage that repair was urgent, or when it was so large or so dangerously placed that its removal appeared imperative. Thus, a large, rough piece of shell, say 2 by 2 cm. in size, which might reasonably be supposed to have carried bits of clothing into the thorax, would be removed; while a machine gun bullet or a small piece of high explosive shell, which for the present at least was apparently quiescent, might, from the evacuation hospital point of view, be better left than removed by a large operation.

FRACTURED RIBS

The complication of fractured ribs may be considered one of the most dangerous of war wounds of the thorax. It almost invariably leads to infection, especially when numerous spicules have penetrated the lung.

The larger bronchi have been found by many investigators to be the habitat of anaerobic and other microorganisms, while the smaller air passages have been considered sterile. But when these smaller bronchioles have been wounded from without so that a free passage exists from the larynx to the wound, the first cough or other expulsive effort of the patient must drive infection from these larger bronchi directly into the visceral wound. This is a simple mechanical explanation of the almost universal infection of these rib punctures and lacerations in compound costal fractures, and it also explains pretty well the absence of infection in "closed thorax" fractures of the ribs; for here the intrathoracic pneumatic pressure prevents the secretions of the bronchi from being carried to the wound of the peripheral part of the lung. The same danger of infection is present in open (sucking) wounds inflicted by lung-piercing projectiles, while it is often absent when the projectile is small and its track of entrance is closed spontaneously by overlapping tissue planes. Whenever, therefore, there was an open sucking wound of the thorax, great care was taken to "clean up" splinteered ribs and to extract loose fragments from the wounded lung.

There were eighteen of these cases in which ribs had been fractured through large wounds, and of these patients, eight died, a mortality of 44 per cent., a larger death rate than in any other class of thoracic wounds.

"SUCKING WOUNDS"

Sucking wounds are those in which there is a free access of air to and from the interior of the chest. These wounds, when small, are not necessarily dangerous. Traumatic openings, however, when large enough to admit air by suction in quantities as great as or greater than that which enters the lungs through the larynx, give rise to the well known flapping of the soft tissues of the mediastinum with each respiration. This condition is extremely dangerous, not only because it diminishes the amount of intrapulmonary respiratory air in the uninjured as well as in the injured side, but also because the motion to and fro of the heart itself forms the basis of a particularly fatal form of cardiac shock.

Probably the simplest method to overcome this condition for the time being is to close the chest in the quickest possible way, even though it be done by simple skin suture, or, failing this, by firmly covering the wound with soaking wet gauze. If the wound is a very large one, the patient's distress due to the mediastinal motion can be instantly relieved by traction on the presenting lung. This steadies the mediastinum, and a few sutures or even a sterile safety pin holding the lung to the chest wall will for the time being relieve the condition. No great traction force is necessary. The pleura covering the mediastinum is in from twenty-four to forty-eight hours stiffened by exudate, and the peril of the flapping ceases. It is the presence of this stiffening exudate that makes opening the infected chest less dangerous than wounding the normal thorax. Thoracotomy for empyema will illustrate this immunity.

Large sucking wounds also presuppose gross injury to lung and other structures, besides the probable implantation of infected material, such as clothing, etc.

Fifteen of these open sucking cases were treated by us, and there were six deaths—a mortality of 40 per cent.

PENETRATING WOUNDS

In the class of penetrating wounds we include cases in which the missile is within the chest or in the thoracic wall, having passed completely through one wall of the cavity, but with no wound of exit. There were thirty of these, with nine deaths—a mortality of 30 per cent.

COMPLETELY PERFORATING WOUNDS

Completely perforating wounds, with entrance and exit and no foreign body remaining, form a list of twenty-one, with only two deaths, or a mortality of 10 per cent. No large operations had to be performed in these cases. In fact, often the simplest débridement sufficed, especially in the probably aseptic through and through punctures by hot machine gun bullets striking the chest squarely and not tangentially. These patients usually suffer comparatively little. There may have been a little hemoptysis, often a hemothorax relieved by simple emptying by cannula, described farther on, and in a few days there is apparent recovery. But it is well known that these hemothorax cases are sometimes the site of very mild infection with late empyema formation, and some of these simple cases, with no operation or with simple local anesthesia débridement have developed an opposite lung pneumonia from five to seven days after the injury. Also, from observations at Base Hospitals No. 3 and No. 101, it has been learned that patients of this class sent to the base will sometimes develop the most serious infection. The estimation of mortality rate from work solely at the front cannot fail to be misleading.

MISSILES

Bullet and shell fragments injuring the thorax were rather surprisingly similar in percentages of mortality, the difference in those cases in which the character of projectile had been demonstrated being but 2 per cent. There were twenty-two bullet wounds with 27 per cent. of deaths, and sixteen shell fragment injuries with 25 per cent. mortality. This may be accounted for by two factors: Bullets striking the ribs at a slant or tangentially make ugly and destructive wounds, while it is only the smaller shell fragments that give rise to injuries not immediately fatal. So by the time the patients had reached the evacuation hospital, the conditions had been equalized, small, completely perforating éclats often doing little or no more damage than merely perforating machine gun bullets, while the large pieces of high explosive shells killed the men outright.

Illustrating the fact that rifle bullets striking at an unfortunate angle were capable of inflicting injuries of great magnitude, we briefly cite the case of a soldier who was struck by a machine gun bullet near the angle of the eleventh rib. The missile, ranging upward, fractured the next upper five ribs in the same location, and then passed through the external soft parts and out through the axilla. There was an enormous wound on exposing the injured region, the abdomen, diaphragm and thorax being widely torn so that portions of the stomach, spleen, omentum and colon prolapsed into the wound. The abdominal wall and wounded diaphragm were repaired and the lungs insufflated by the intrapharyngeal method so that the left lower lobe presented at the wound. The defect in the parietal pleura, fully 5 cm. in diameter, was closed by suturing the lung to the circumference of the pleural wound. This patient did well, though he developed an opposite lung pneumonia, and when the team left the hospital the prognosis was excellent. There had been no leakage around the suture line of pleura and lung.

Another patient had been struck in a similar manner, the greater part of the left chest collapsing. His condition was not suitable for operation, and he soon died.

One man was struck in the right arm, the missile cutting the musculospiral nerve and not injuring the humerus; then it entered the right side in the axillary line, fifth interspace, traversing the chest and presenting beneath the skin in the fifth interspace, left axillary line. It was removed under local anesthesia. The éclat was 2.5 cm. long (1 inch) and 0.63 cm. in section (1-4 inch square) and weighed 24.5 gm. It had entered "head on" and had apparently maintained its trajectory without "up ending." Yet, excepting a right hemothorax which was emptied by trocar and cannula, no ill effects appeared to follow this and the man was evacuated practically well, within ten days. Theorizing on this strange accident, one is forced to the conclusion arrived at by one of us (W. A. K.) that the projectile struck the posterior wall of the sternum and thence was deflected endothoracically but outside the lung, still traveling in the direction of its long axis until it reached the costal interspace, where it lodged beneath the skin, not having caused enough damage in the left chest to produce a left hemothorax.

HEMOTHORAX

The diagnosis of hemothorax is easy, especially in the recent cases. Flatness on percussion with strong voice conduction are characteristic. The fluoroscopic examination is confirmatory.

The blood may so obscure the screen or plate that foreign bodies even of large size may be missed. A recent hemothorax in a patient whose condition does not seem to warrant a cutting operation should be treated by emptying it with the trocar and cannula of the army general operating set and without forcible suction. The procedure will be described later. An infected hemothorax should be treated as an empyema.

PNEUMONIA OF THE UNINJURED SIDE

Pneumonia of the uninjured side was the commonest and probably the most serious complication that we encountered. Nor did it seem to make any particular difference whether the patient had been operated on or not. It was of the bronchopneumonic type, but the patches as discovered by physical signs and checked up by roentgenoscopy were extensive. The middle and upper parts of the lung were most often affected, the bases rarely. The disease usually appeared from five to seven days after the injury, and in at least three cases it defervesced by crisis and then recurred. We have no theory to explain the incidence of this complication. It reminds one of the so-called "sympathetic" or "reflex" anuria of unilateral acute kidney lesions.

INFECTION BEFORE OPERATION

Four of our patients had advanced infection of wounds before operation, though it is probable that few or none of the wounds were bacteria free. Of these four patients, three died. In one of these Welch's bacillus was present, in one, Welch's bacillus and streptococci, and in the third and fourth the bacteriology was not noted.

ROENTGENOGRAPHY

The roentgenographic department, an indispensable adjunct to modern war surgery, was most efficiently directed by Captain Alleman and his staff. The speed and accuracy with which foreign bodies were localized during a rush of wounded is worthy of high commendation.

In the intelligent after-treatment of chest injuries, fluoroscopy in the vertical posture is a necessity. The apparatus was secured a few days after the arrival of Team 39, and it proved of enormous value, both in determining the presence of exudate, usually blood, and also in confirming the diagnosis of consolidation (pneumonia) of the "other" lung. Frequently the changes in a case had to be observed from day to day, to decide on repeated aspiration or other secondary procedures that might be of vital importance. Fluoroscopy of this kind occupies only a few minutes; it saves plates and films, and gives one a better idea of lung expansion than could possibly be obtained in any other way. The difference in this respect is similar to the comparison of observations made during a surgical operation and those at a necropsy.

We believe that the vertical fluoroscope should be part of the equipment of every evacuation hospital. The amount of current and the size of the tube are much less than are required for making plates.

IMPROVEMENT IN INTRATHORACIC LOCALIZATION

Bodies appearing within the heart shadow and moving with the cardiac impulse are not necessarily within the heart or pericardium. They may be in the lung lying next to the pericardium, and at operation when the lung collapses they may be found far from the heart. Also, bodies within the chest and localized by the roentgen ray may at operation be found at some distance from the point of localization, especially if they are within the lung substance. A better idea of where they will lie when the chest is open may be obtained if after the first roentgenographic examination a cannula is inserted through the thoracic wall and left there long enough for the air to enter and the lung to collapse. A second roentgenographic examination will then often reveal the shadow of the foreign body at some distance from where it was first localized and nearer the point where it will be when the chest is open. We tried it in two cases, and the shadow had moved more than 3 inches. Naturally, this method is unnecessary in sucking wounds.

ANESTHESIA

Unfortunately most of the time ether or local anesthesia had to be employed, because it was not possible to secure the nitrous oxid apparatus until about ten days before the departure of the team.

OPERATIVE PROCEDURES

Major Intercostal Thoracotomy.—A long intercostal incision is made, usually in the seventh interspace, the ribs being separated from 3 to 5 inches or more by means of a powerful retractor. Lilienthal's instrument was used. Exposure and ease of manipulation are better than by any other known method, and resection of a rib is very rarely necessary in these recent cases. All parts of the chest can be easily reached by eye and hand—even by both hands—and the work done is correspondingly safe. The lung may be collapsed or distended by the anesthetist, who forces the ether, gas or air by means of a foot bellows through a tube in one nostril, closing the patient's mouth and other nostril. The demonstrations were said to be most convincing.[1]

These wide explorations were reserved for the serious class of cases referred to earlier in the article. They were sixteen in number, and seven of the patients died—a mortality of 43.7 per cent. Among these was one case in which a foreign body in the pericardium was mistaken for one in the lung.

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[1] The method of anesthesia has been fully described on page 8 of a paper forwarded, Aug. 19, 1918, from Base Hospital No. 101, Base Section No. 1, to the chief surgeon, American Expeditionary Forces, at his suggestion in the third indorsement of a communication by Lieutenant-Colonel (then Major) Lilienthal to the chief surgeon, A. E. F., dated Base Hospital No. 3, June 15, 1918.

Six of the sixteen patients were in shock, and of these four died, three of gas gangrene.

In three of these large chest operations other major operations had to be performed at the same sitting. None of the patients in this group died.

Several times the original wound was enlarged, with or without resection, and rib-spreader exploration performed.

In three cases the missile had penetrated the chest wall and had lodged in or just below the diaphragm. In two of these, wide exploration made it a simple matter to extract the foreign body and suture the diaphragmatic wound. One foreign body had passed almost through the diaphragm and was dislodged, dropping into the abdomen at the first touch. The patient, however, made an excellent recovery.

In one case there was a wound of the pericardium through the right chest. It was easily sutured through the wide intercostal thoracotomy.

Pneumopexy.—Suture of the lung to the chest wall was done in our cases only to close large defects of the pleura and ribs. The lung is distended by the anesthetist until it lies flush with the thoracic wall, plugging the defect. It is then neatly sutured to the edges of the pleural opening. This was done four times, and in one case the lung suture loosened. This patient had anaerobic gangrene of the chest wall. He was finally evacuated to Base Hospital No. 3 and is now doing well.

Method of Emptying Hemothorax.—With the patient sitting, under local anesthesia, including the pleura, an incision one-half inch long is made through the skin. A medium-sized or large cannula of the army general operating set is introduced. A rubber tube not less than 8 inches in length is attached to the cannula after it is in place and the fluid is running. It may now be siphoned off, and as the chest empties, air takes the place of the bloody liquid. If this air is to be left in, to be later absorbed, the cannula may now be removed. If the air is to be expelled and the lung expanded to the chest wall, the patient is ordered to strain with the glottis closed, and the instant no more air escapes from the cannula the instrument is withdrawn. From 1,000 to 2,200 c.c. of fluid may be quickly, safely and painlessly removed. Also, wounding the expanding lung by a needle point is obviated. If the hemothorax fluid is to be used in transfusing the same patient, it may be collected directly from the tube into a sterile bottle, examined by culture, filtered and citrated. This form of transfusion was practiced by us but once, and the already moribund patient finally succumbed. A hemothorax emptied and shown by culture to be mildly infected (by the staphylococcus) may nevertheless go on to recovery without operation. We encountered one such case, the patient being evacuated, apparently well, in two weeks. We regret, however, that we were not successful in following up this patient after he left us.

Postmortem Examinations.—There were but few postmortem examinations, because no pathologist was connected with the institution and Lieutenant Pettit, an excellent bacteriologist, was too much occupied during the rush period with his laboratory work to perform necropsies. Examinations of this kind were made, however, in all cases in which the cause of death did not appear obvious.

Mortality.—It is believed that all deaths from whatever cause should be reported. Notes of thirteen of our fatal cases appear here from histories. The facts in the three others are given from our tabular notes, but unfortunately the histories are missing. Copies of these are in the books of Evacuation Hospital No. 8.

REPORT OF CASES

Case 1.—G., who was in shock, had been wounded by two foreign bodies; the fifth and sixth ribs were splintered on their convexities. A major intercostal thoracotomy was performed, and both foreign bodies, which were loose in the chest cavity, having traversed the lung, were removed. The wound was clased without drainage. There was gas gangrene of the wound. It was at once opened widely and even debrided. The process appeared under control, but the sloughing entered an intercostal vessel and there was great hemorrhage. Transfusion was performed. This was followed by improvement, then gradual deterioration, and death four weeks after operation. Postmortem examination disclosed general gas infection.

Case 2.—F. had a nonsucking penetrating shell wound with two fractured ribs in the left chest. He was in shock, but a major thoracotomy was performed to find the foreign body and to remove rib splinters which had wounded the lung. The foreign body was removed. The patient died four days later of gas gangrene.

Case 3.—T., who was in shock, had fractured ribs and an open sucking wound. He died following simple closure of the wound.

Case 4.—P. was in shock. A machine gun bullet had wounded the inside of the mouth, fracturing the lower jaw near the median line. Another bullet had entered the left chest, fracturing the sixth and seventh ribs and coming to rest apparently in the pericardium, moving freely with each heart beat, as determined by fluoroscopy. Major thoracotomy was begun under local and continued under general anesthesia. The pericardium was explored after a searching of the entire right chest had disclosed wounds of the lung apparently of entrance and exit. No bullet was found in the pericardium, which was then sutured. There was no blood in the pericardium. Death occurred in a few hours, and postmortem examination disclosed the bullet in the right lower lobe of the lung. It had evidently lain against the heart and within its fluoroscopic shadow, and had not moved outside the shadow, though kicked by the heart at every beat. This case and Case 13 stimulated one of us (H. L.) to invent a method that might prevent such errors in diagnosis; it has been described under "Roentgenography."

Case 5.—T. had received a large sucking wound of the right scapular region. It was closed by muscle flaps. The patient died in three days.

Case 6.—G. had a sucking chest wound, which was repaired. There was complete paraplegia below the nipple line. The cord had been injured.

Case 7.—J.[2] had a foul wound. The chest was drained of 200 c.c. of decomposed blood. There were sepsis and pneumonia.

Case 8.—H. had received an abdominothoracic wound by a bullet entering the left back at the tenth rib. The bullet was seen in the right iliac region by roentgen ray. It was easily found wrapped in omentum and removed. There was hemoperitoneum from a large wound of the spleen, which was removed through a second (left) incision. The chest was not operated on. The patient died in three days of extensive gas infection of the left abdominal wound.

Case 9.—P. had a large foreign body in the upper lobe of the left lung—a piece of shell that had passed through the lower lobe. The patient had been in the shock ward for twenty-four hours and was not in good condition at operation, which was an easy major intercostal thoracotomy. The foreign body was removed and there was primary union of the wound, but on the fourth day, opposite lung pneumonia appeared, and the patient died three days later.

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[2] Tabular notes only. History not found.

CASE 10.—C. was operated on twenty-four hours after having received a gunshot wound just below the point of the left shoulder, in back. There was no wound of exit. The patient was in shock. He had been observed over night because he was too poor a risk for operation. Roentgenoscopy revealed a foreign body in the ninth space, near the spine. Intercostal thoracotomy and rib-spreading were performed for tension pneumothorax. The bullet was loose and easily removed. The upper lobe was atelectatic. The fourth rib was fractured. There was hemothorax. The patient died in three days of gas bacillus and streptococcus infection.

CASE 11.—S. had received multiple injuries of the left forearm, elbow and humerus. The missile entered the chest in the region of the left scapula; there was no wound of exit. The patient was too weak for an operation on the thorax. He died some days later from pneumonia of the opposite lung. There was no thoracic operation, except for a slight débridement.

CASE 12.—C. had had the seventh, eighth, ninth and tenth ribs fractured near the angles by a machine gun bullet. He had a "stove-in" chest and a sucking wound. The wound was sutured and the chest strapped. No radical operation was possible. The patient died in thirty-six hours.

CASE 13.—R. had received wounds in both sides of the chest, but a *large* foreign body, measuring 5 by 1 cm., was reported in the left chest. Large exploration, by intercostal thoracotomy, detected no foreign body, and the patient died on the table. Immediate examination revealed hematopericardium and a *small* foreign body within.

CASE 14.—D. had an infected bullet wound with fractured ribs. Thoracotomy was performed. The Welch bacillus was present. The patient died from pneumonia of the opposite lung. The wound had nearly healed eight days after operation.

CASE 15.—T.[2] had an open sucking wound of the back with rib fractures. After closure, he died in forty-eight hours.

CASE 16.—W.[2] had an open sucking wound with fractured ribs. Death occurred soon after closure.

SUMMARY

Of the total of sixty-seven thoracic cases that passed through our hands, sixteen, or 23.8 per cent., were fatal. Fifty-one of these patients were operated on, and fourteen, or 27.4 per cent., died. Sixteen patients were not operated on, and of these only one, or 6.2 per cent., died. This does not mean, however, that operation is responsible for the large proportion of deaths. Of the sixteen patients not operated on, four were in severe shock but with small wounds; one of these patients died. The other twelve apparently were cases that demanded no operative therapy. Yet it is recognized that infection and empyema may, in some cases, have developed after evacuation.

These statistics, together with what may be gathered from the preceding report, may be taken for what statistics are worth. They compare most favorably with the general figures in the literature.

CONCLUSIONS

1. The wounds seen in evacuation hospitals may be divided into two classes: (A) Those which demand repair of obvious injuries to the chest wall, such as large open wounds or extensive fractures of ribs with probable injury to lung. (B) Injuries to the lung, or large foreign bodies in the thorax which demand exploration.

Wounds in Class A should be treated on ordinary surgical principles and the wound closed as well as possible. In the presence of large defects in the pleura, stopping the opening by suturing the inflated lung as a plug should be performed when there is not sufficient other tissue for the purpose.

Wounds in Class B should be operated on by what I have denominated major intercostal thoracotomy without resection of ribs. With the aid of a well constructed rib retractor an ample opening can be made through which all parts may be clearly inspected and through which operations on the lungs, diaphragm and most parts of the chest wall can be performed with comfort to the operator. In concluding the operation the ribs may be easily brought together and the pleura fully approximated by three pericostal sutures of absorbable material (kangaroo tendon or chromicized catgut). Whether or not there should be approximation of the skin is a matter to be decided in each case.

2. There may be combinations of Class A and Class B by extending an already large wound in any part of the chest. The principle of visual exploration with the aid of a rib spreader can be here applied.

3. Some kind of forced anesthesia, such as the intrapharyngeal method already referred to, is absolutely necessary in treating recent wounds of the thorax by full exploration.

4. All thoracic wounds should be under observation for not less than ten days at the evacuation hospital, and, even then, we are not sure that complications, mechanical or by infection, may not occur at a later period.

5. Pneumonia of the opposite lung is the greatest immediate danger in these cases. While its cause is unknown, we should guard the patients against cold and exposure, especially during the change of dressings.

ACUTE TRAUMATIC ATELECTASIS

Atelectasis has been frequently noted by operators, and we have never heard a satisfactory explanation. It usually occurs in the neighborhood of a wound and is far more than an ordinary collapse of the lung. It is usually unilobular, the lobe being contracted to its smallest possible size. The tissue feels soft and not infiltrated. I would suggest that animal experiments be undertaken to discover the cause of the atelectasis, and I would also advance the theory that it is a true spastic condition of the lung caused by visceral muscular contraction, often but not always in the effort of nature to draw the lobe away from a point of peripheral irritation.

Mental Diseases in New York During War Period.—H. M. Pollock, statistician of the New York State Hospital Commission, in an article on the subject named in the *State Hospital Quarterly*, February, 1919, published by the hospital commission, offers the following figures and conclusions: Comparing the admissions on account of mental diseases for the period 1911-1914 with the period 1915-1918, there was an increase in senile cases of 5.5 per cent., in general paralysis of 14.2 per cent., a decrease in alcoholic cases of 22.3 per cent., an increase of 17.5 in the manic-depressive and allied groups, an increase of 37.9 in involution melancholia cases, an increase of 42.9 per cent. in dementia praecox and allied forms, and a decrease of 12.5 per cent. in the psychoneuroses. It can reasonably be inferred that the war, like all great emotional disturbances, has been a precipitating factor in the causation of some forms of mental disease among the civilian population. Patients under treatment in the institutions for the insane in the state increased more rapidly during the war. The increase was due in part to the accumulation in the hospitals of deportable aliens. The ratio of first admissions to the general population of the state increased during the war period. The rate of alcoholic insanity decreased during the war, especially in the years 1915 and 1918.

EFFECTIVE MALARIA CONTROL IN A RICEFIELD DISTRICT

WITH OBSERVATIONS ON EXPERIMENTAL MOSQUITO FLIGHTS

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In a previous publication,[1] there was given in detail the endemicity of malaria in two rice districts, one in Louisiana and one in Arkansas. In the Arkansas district, known as the Extracantonment Zone, Ebert's Field, and including the town of Lonoke, various intensive control methods have been used continuously during the year 1918.

LOCATION

The field is located about one-fourth mile west of the western limits of Lonoke, a town with a population of approximately 1,500. The field was located in an area used during 1917 for the cultivation of rice, and the area to the west and south is now used exclusively for rice cultivation.

TOPOGRAPHY

The entire area is flat with very slight slopes toward the streams and the divides undetermined. The top soil is what is commonly called gumbo, underlaid at a depth of 2 or 3 feet with an impervious clay stratum. Owing to the flat slopes and the impervious character of the soil, natural drainage is poor.

RICE CULTURE

From a topographic and geologic standpoint, the section is particularly well adapted to rice cultivation, and the greater part of the prairie land is under cultivation, as shown in the accompanying chart. With the establishment of the Flying Field, an agreement was made whereby no rice should be cultivated within 1,500 feet of the boundaries of the field, thus bringing the first ricefield to the west 1 mile from the barracks and to the south three-fourths mile from the nearest camp building.

The results that we are recording in this short article are remarkable, for malaria has been entirely eliminated among the civilian population, in spite of the fact that for the previous summer the history incidence index demonstrated the prevalence of chills and fever in twenty-nine out of every 100 inhabitants.

METHODS OF CONTROL

The principal methods adopted to control the disease were: (1) sterilization of carriers to prevent the infection of mosquitoes; (2) screening, to prevent the access of mosquitoes to men, and (3) limitation of the production of mosquitoes, as far as was found practicable.

1. *Human Carriers.*—Two separate blood indexes (thick smears) were made of every resident in the Lonoke district. The taking of these indexes required a large amount of educational work in the community, in order to develop the spirit of cooperation, for we were operating in a community in which malaria control and laboratory diagnostic methods had never been used before, and a natural individual tendency existed against the taking of blood smears. The index results recorded in a previous article were low but interesting, if one compares the gradual seasonal increase and the evident importance of the carrier in the malaria case rate for the coming summer. The taking of blood smears and the checking up of the residents were accomplished by making card indexes of the occupants of each house, store and building. As far as possible, examinations were made of new residents, also.

Quinin Sterilization of Carriers: Of the persons from whom thick blood smears were taken, ninety were found on microscopic examination to be carriers, every one of whom was treated with quinin in capsules by mouth, a dose being 10 grains a day, preferably taken at bedtime. Each carrier treated was followed for thirty days so as to make certain that the treatment was actually carried out. At the end of thirty days, individual patients were given quinin sufficient for a like period of time, with instructions to use as in the first period. Of the entire number, only 10 per cent. followed out in its entirety the treatment of 10 grains a day for the sixty days. We were checking the discovered carriers microscopically each month, so, what with laboratory methods and a careful study of their history, there was no possibility of our missing any relapses in any given patient. The last blood examination was made in September, all carriers proving negative.

Peculiarity of Carriers: Not all of the foregoing carriers were discovered at the initial time of the making of the indexes. In five cases, the second dose of typhoid vaccine precipitated a chill, which prompted us to examine the blood. In all, many plasmodia (signet rings) were found. The blood of these patients had proved negative twice before. The same result was obtained when another carrier had been vaccinated against smallpox, evidence of a positive "take" having just been noticed. Why the second dose of typhoid vaccine and not the first or third precipitated a paroxysm is an interesting problem.

The results on the same people as shown by the indexes point to a seasonal variation, which is important if one should desire information as to the maximum malaria incidence. Many carriers showed parasites curiously resistant to the stain. Active exercise and fatigue evidently played an important rôle in the appearance of parasites in the peripheral blood. In some cases among new residents who had previously given a typical history of chills every other day and whose blood was negative on microscopic examination, the blood became frankly positive under these physical conditions. This may explain why, in the case of two untreated carriers examined every day for a month, in one we were able to obtain only two additional positives and in the other only three. The observed fact, as regards these two carriers, that the positives were obtained near the evening hours, with negative results in the morning, is likewise interesting. Probably the most important peculiarity of the malaria carriers was the fact that in nineteen there was absolutely no history of chills and fever or of any symptoms suggesting malaria, active or latent, in the previous three years.

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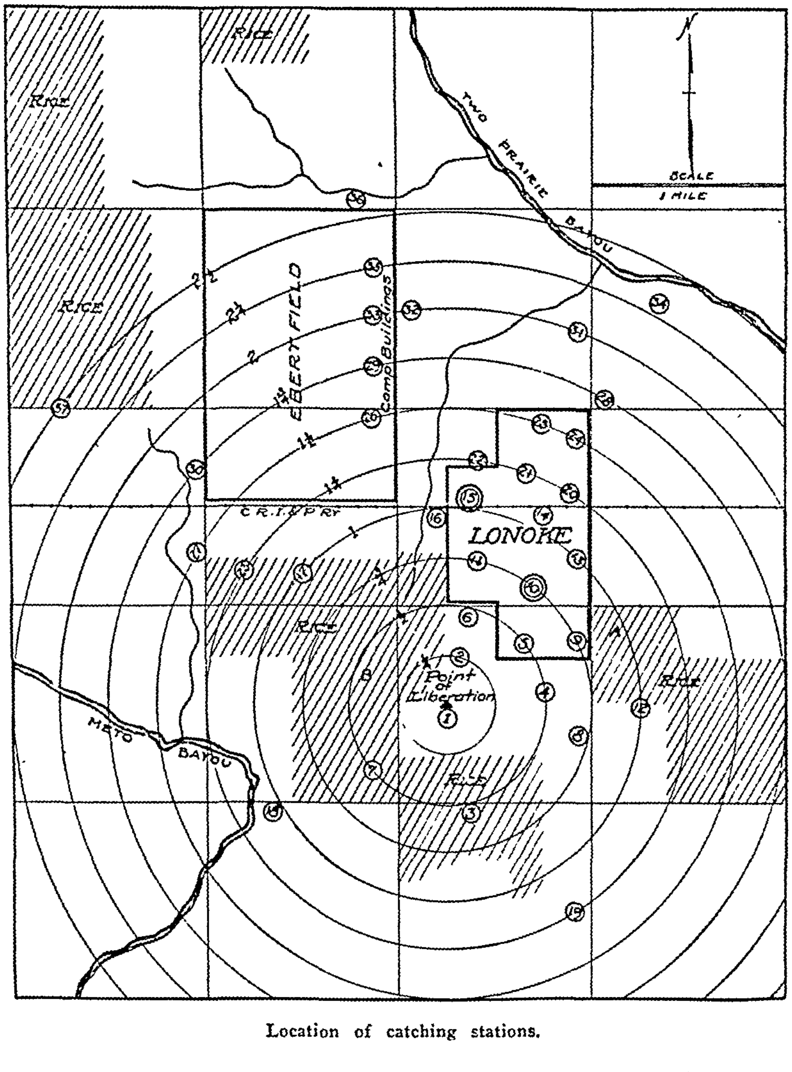
[1] Geiger, J. C.; Purdy, W. C., and Bates, L. I.: Malarial Endemicity of the Rice Districts of Louisiana and Arkansas, J. A. M. A. **71**: 1283 (Oct. 19) 1918.

2. *Screening.*—Beginning in January, and following a house to house survey, requirements for screening, including specifications as to the size of mesh, namely, from sixteen to eighteen meshes to the inch, were published and a definite date set for complete fulfilment. All public buildings in which any gatherings at night would occur, such as churches, were required to install vestibuled screened doors in addition. No open-air gatherings were allowed. On the basis of reasonable screening, negro cabins were separated into three possible classes, uninhabitable, repair possible, and good. Monthly inspections of screening were made. The importance of this control measure is obvious when one considers that only 10 per cent. of houses, stores and buildings had met the requirements at the time of the initial inspection.



Location of catching stations.

3. *General Measures.*—For mosquito control operations it has been assumed that the area within which operations must be carried on shall extend at least 1 mile beyond the limits of the area to be protected. On this basis the control area necessary for the protection of both Ebert's Field and the city of Lonoke comprises approximately 13 square miles, which area includes both the field and the city.

Control by Drainage: With the exception of the bayous, the streams in the area had no well defined channel or bed. Surface drainage, in fact, practically all the drainage from the ricefields, was taken care of by road ditches. These ditches were faulty in construction and in many cases were without outlets.

The work necessary, in order that the water surfaces might be reduced to a minimum and the proper conditions maintained for efficient control over mosquito breeding, required the clearing and channeling of the existing waterways, the clearing of old ditches, and the construction of new ditches that were necessary for the draining of swamp areas and for the prompt removal of water from the ricefields. This work required the clearing of 10 miles of stream-bed and the ditching of 60 miles of ditches varying in depth from 8 inches to 3 feet.

Control by Oiling: With the commencement of breeding, during the latter part of April, oil control measures were instituted, and from that date until the close of the breeding season all water surfaces within the area, with the exception of the ricefields proper, were sprayed with oil at intervals not greater than seven days. Owing to frequent breaking of ricefield levees, intentional and unintentional, and the discharge of water containing mosquito larvae and pupae, close inspection and frequent applications of oil were required, in order to prevent production. Constant inspection was made in checking the results of the control work.

While control measures did not affect breeding within the ricefields, they did confine all breeding to these rice areas. With these prolific breeding places present within the district, entire absence of mosquitoes could not be expected; but local information showed a marked decrease in numbers over those of previous years.

Control of mosquito production being humanly impossible so long as the ricefields were within flight distance of any and all parts of the area, it is interesting to compare the mortality and the history incidence of malaria in 1917 with the case reports, mortality and September check index of 1918. In 1917, there occurred four deaths from malaria in the control area against none in 1918. The history incidence index, 29 per cent., or, expressed in the number of cases, 522, the only available record for 1917, when compared with the actual development of only one case in 1918, is conclusive proof of the efficiency of the control.

This is remarkably demonstrated by the September check index (thick smears) taken of every resident in the area, the result giving a percentage of 1. As final evidence there were the continuously negative findings of infection on dissection of *Anopheles quadrimaculatus,* the only *Anopheles* breeding in the area.

In order that a comparison of results obtained in the September check index might be made with the results obtained in communities adjoining but outside the control area, indexes were made on two uncontrolled bayou bottom sections. The results of these indexes, based on a limited number of persons, showed 7 per cent. in one case and 4.5 per cent. in the second.

Since in spite of the attempt to control production, *A. quadrimaculatus,* recognized as an efficient vector of malaria, was present in large numbers about the residences of the community (as may be seen from Table 1 illustrating the flight experiments), this diminution of malaria can be ascribed only to screening and the sterilization of the human carriers—the latter being probably the main factor.

FLIGHT EXPERIMENTS

May 25 ricefields A and B were flooded. After an interval of from fifteen to twenty days, and before any of the other fields in the area were flooded, *A. quadrimaculatus* was observed more or less throughout the city and in the area adjoining and to the east of the aviation field. Since control measures within the zone were at that time excellent, it was most probable that the mosquitoes observed came from the ricefields just mentioned, in which fields production was great. If this was the case, the flight distance was as great as 1$\frac{7}{10}$ miles, a distance considerably greater than that observed by Le Prince and Griffitts[2] in South Carolina, where the greatest distance found was slightly greater than 1 mile.

In order that these observations as to flight might be checked, flight experiments were planned.

Any flight experiment in this section would of necessity be of a somewhat more complicated nature than an experiment conducted in a rural community, since here we have a compact community of 1,500 people within 1 mile of a camp of 1,200 men, affording a maximum of available food material.

The experiment consisted of catching, staining and liberating at a given point *Anopheles quadrimaculatus* mosquitoes, and the recatching for examination at given distances from the point of liberation, these distances being at one-fourth mile intervals. The time interval between liberation and the start of recatching was set at sixty hours.

The experiment was begun, August 27, on which date approximately 5,000 mosquitoes, all of which were *A. quadrimaculatus* and about four fifths of which were females, were caught. Practically four fifths of the mosquitoes were caught in sheds and on screens at Stations 5 and 9, and the balance at Stations 32 and 36, as shown in the chart.

After catching, the mosquitoes were put in containers made from lantern globes, the open ends being covered with bobbinet, and were later transferred to the laboratory for staining.

The mosquitoes within the lantern globe containers were stained by spraying them through the bobbinet mesh with an atomizer.

A 1 per cent. eosin solution was first tried, but it was found that this stain was not readily discernible on examination of the sprayed mosquitoes. A 1 per cent. aqueous solution of methylene blue was found to give more satisfactory results, and this stain was therefore used.

As would be expected, a certain number of mosquitoes were killed, owing to heat, confinement and other causes, but, at the time of liberation (nine hours after catching), approximately 4,000 were alive and active.

The stained mosquitoes were liberated at dusk at a point southwest of the city, near one of the flooded ricefields, this point being shown on the chart. At the time of liberation, the weather was clear and warm, and only light air currents from the southwest were prevalent.

A period of sixty hours elapsed between the time of liberation and the beginning of the recatch, the weather conditions remaining unchanged during this interval.

Recatching was started on August 30, and was continued through the period to September 7. During the period of the recatch, the weather conditions changed to cloudy with some rain, September 2, 3 and 4, remaining cloudy on the 5th and 6th, and clearing on the 7th. During the period of recatch, there was no wind, and such air currents as existed were from the southwest.

Recatches were made at points or stations located at definite distances from the point of liberation, and at distance intervals of one-quarter mile. Each collection station included a group of buildings, and mosquitoes were caught in sheds and stables, under houses and on screens.

Catches were made at thirty-seven different stations located as shown on the chart. As will be noted, the greater number of the stations are located to the north, since here was the greater congestion of possible food material. The stations to the west and south

TABLE 1.—FLIGHT EXPERIMENTS

Distance from Liberation Point	Station	Date of Collection	Number Caught			Remarks
			Anopheles		Culex	
			Male	Female		
0	1	Aug. 31	30	355	14	Farm buildings
¼ mile	2	Aug. 31	34	111	3	Outbuildings
½ mile	3	Sept. 5	67	1,500	20	Farm buildings
	4	Sept. 5	205	1,469	87	Outbuildings
	5	Aug. 30	308	538	90	Outbuildings and about houses
		Sept. 3	439	559	53	
	6	Aug. 30	3	21	0	
		Sept. 3	20	96	4	
	7	Sept. 5	95	2,155	58	Farm buildings
¾ mile	8	Sept. 5	458	2,018	41	Farm buildings
	9	Aug. 30	95	166	3	Outbuildings and about houses in town
		Sept. 3	84	599	0	
		Sept. 7	19	44	3	
	10	Aug. 30	60	126	1	
		Sept. 3	10	157	2	
	11	Aug. 30	30	170	0	
		Sept. 4	32	37	2	
1 mile	12	Sept. 7	68	392	3	Farm buildings
	13	Aug. 30	179	144	3	Outbuildings and about houses in town
		Sept. 4	76	367	6	
	14	Sept. 4	0	0	0	
	15	Aug. 30	77	291	40	Outbuildings and about houses in town
		Sept. 3	7	57	5	
	16	Aug. 30	1	9	1	About rice mill
		Aug. 31	20	71	4	About rice mill
	17	Aug. 31	6	73	0	Farm buildings
	18	Sept. 7	5	37	0	Farm buildings
1¼ miles	19	Sept. 5	122	1,505	7	Farm buildings
	20	Sept. 4	45	161	21	Outbuildings and about houses in town
	21	Aug. 30	31	97	14	
		Sept. 4	14	61	3	
	22	Aug. 30	47	218	5	
		Sept. 3	2	13	3	
		Sept. 4	21	47	1	
	23	Aug. 31	22	340	5	Farm buildings
1½ mile	24	Sept. 4	66	94	3	Outbuildings and about houses in town
	25	Aug. 30	1	6	1	
		Sept. 4	21	38	3	
	26	Aug. 30	14	46	4	Ebert Field hangars
		Sept. 7	17	136	13	Ebert Field hangars
	27	Aug. 31	10	143	11	Farm buildings
1¾ miles	28	Aug. 31	6	34	0	About buildings
	29	Aug. 30	23	44	3	Ebert Field hangars
	30	Aug. 31	3	45	0	Farm buildings
2 miles	31	Aug. 31	34	35	0	In woods
	32	Sept. 5	22	64	1	In old house
	32	Aug. 30	141	416	6	In old house
	33	Aug. 30	11	26	0	Ebert Field hangars
2¼ miles	34	Aug. 31	57	128	5	In woods
	35	Aug. 30	17	38	3	Ebert Field hangars
2½ miles	36	Aug. 30	20	208	4	Farm buildings
	37	Aug. 31	124	410	48	Farm buildings
Total.................			3,319	15,915	597	

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2. Le Prince, J. A., and Griffitts, T. H. D.: Flight of Mosquitoes, Pub. Health Rep. 32: 656 (May 4) 1917.

represent every group of farm buildings within the area. At all stations at least one catch was made, while at several stations two or more catches were made on different dates. Table 1 gives the detailed information as to catches and types of mosquitoes caught. No attempt was made to catch any except *Anopheles*, but, as would be expected, a few *Culex* mosquitoes were included.

The total number of mosquitoes caught, by distance from point of liberation, may be seen in Table 2.

TABLE 2.—DATA AS TO LENGTH OF FLIGHT

0	299
¼ mile	118
½ mile	7,789
¾ mile	4 157
1 mile	1 912
1¼ miles	2 805
1½ miles	617
1¾ miles	158
2 miles	756
2¼ miles	248
2½ miles	814
Total	19 831

Examination of mosquitoes was made by adding a drop of solvent (alcohol, 3 parts; glycerin, 3 parts; chloroform, 1 part) to each mosquito placed on glass over a white back ground and by then observing evidences of the color by use of a small magnifying glass. At the time of examination for stain, observations as to the type and sex were made.

RESULTS

Of the total number examined, only ten were found showing evidences of stain, these all being caught on August 30, the first day of catching. Nine of these, all female *Anopheles*, were found on the screens of one house at Station 10, three fourths of a mile from the point of liberation, indicated on the chart by a concentric circle. One was found on the screen of a house at Station 15, one mile from the point of liberation.

Of the total of 19,831 mosquitoes, 19,238, or 97 per cent., were *Anopheles quadrimaculatus* and 597, or 3 per cent., *Culex*. But one type of *Anopheles* was caught, *A. quadrimaculatus*, confirming other observations that this is the one type of *Anopheles* found in this section during the summer months. Of the 19,238 *Anopheles*, 15,915, or 82.7 per cent., were female. While this percentage is that of the total, the percentage varied considerably for the various stations, and at one station in particular, Station 13, the reverse condition prevailed, as males predominated on one day.

In catching for staining, approximately four fifths of the mosquitoes were caught at Stations 5 and 9; and of the ten stained mosquitoes found, nine were caught at Station 10 or in the same general neighborhood. This brings up the question of the homing instinct observed by Carter, Le Prince and Griffitts.

At the stations in and near the ricefields, *Anopheles* was present in large numbers, and catching was carried on for not over one-half hour period at each station. As the distance from the ricefields increased, the number found decreased; and the time spent in a district increased, with a relatively lower catch.

From the results obtained it would appear that in this section at least a flight of 1 mile might be expected, but that with a fairly densely populated district there would be a dissemination of mosquitoes throughout the entire district.

CONCLUSIONS

1. Malaria has been eliminated from a typical ricefield district.

2. The question of flight of *Anopheles quadrimaculatus* may of necessity be regarded from two angles, that of experiment and that of observation. In one, the largest experiment of its kind ever undertaken in the United States, we have a record flight of 1 mile. In the other observation, there has been recorded continuously and on different occasions a flight of 1$\frac{7}{10}$ miles.

3. The use of 10 grains of quinin sulphate by mouth for sterilization of the blood of malaria carriers is evidently efficient for one malaria season if used actively over a period of thirty days.

4. The completely negative clinical history of the nineteen malaria carriers discovered on microscopic examination indicates, on the one hand, an immense difficulty in obtaining complete malaria control but emphasizes, on the other hand, the importance of the detection of the human carriers.

PROPHYLACTIC USE OF MIXED VACCINE AGAINST PANDEMIC INFLUENZA AND ITS COMPLICATIONS

AT THE NAVAL TRAINING STATION, SAN FRANCISCO

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The fact that the recent influenza pandemic did not reach the Pacific Coast until about October 1, or more than a month after its appearance in the East, gave time to attempt a defense against it. The problems presented to Commander P. S. Rossiter, senior medical officer, of that period, were: (1) to prevent the entrance of the disease on the station, and (2) to prevent or lessen its spread and complications, should it appear among the personnel.

The U. S. Naval Training Station, being located on an island in San Francisco Bay, more than a mile from either San Francisco or Oakland, made an absolute isolation possible. This was maintained during the height of the epidemic, except for a very rigidly guarded supply boat making trips to San Francisco. To accomplish the second object, daily throat sprays of argyrol, 10 per cent., were administered to every person, and steps were taken to produce a prophylactic vaccine.

The reports available at the time from stricken camps and districts showed a great diversity of opinion as to the exciting cause, but there was general agreement as to the pneumococcus and hemolytic streptococcus being largely responsible for the fatal complications. The recent work of Cecil and Austin[1] at Camp Upton, confirming the observations of Lister,[2] had shown that a high degree of immunity can be produced against pneumonia by prophylactic vaccination.

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[1] Cecil and Austin: J. Exper. Med. 28: 19-41 (July) 1918.

[2] Lister: South African Inst. for Med. Res., Pub. 2, 1913; VIII, 1916; X, 1917.

Although there was difference of opinion as to the etiologic relationship of the influenza bacillus in this disease, and the possibility of conferring immunity against it,[3] a culture of *B. Influenzae* from a fatal case was obtained from the Rockefeller Institute to incorporate in a mixed vaccine.

After receiving the culture of *B. Influenzae* from the Rockefeller Institute, it was found most difficult to reproduce good growths with our ordinary human blood agar, prepared for meningococcic cultures. Therefore, other mediums were prepared and tested, such as streaked blood agar, laked blood agar (human) and rabbit's blood agar; but since the human blood agar titrated neutral to phenophthalein and gave a growth much inferior to that of the rabbit's blood agar of the same reaction and percentage of blood (10 per cent.), and, furthermore, when it was observed that blood from different human donors gave variable growths, from barely perceptible to rather easily discernible colonies, and that the bacilli varied from the fine, minute, evenly stained rods to most bizarre forms, it was concluded that the human blood contained natural immune bodies in varying amounts.

It was found that with any of the foregoing methods in order to grow a sufficient quantity of bacilli quickly to make up vaccine for our needs (20,000 c.c.), a different medium was required. Following a suggestion of Professor Hall of the University of California, the human blood agar when cooled was cooked in a Freas dry oven at a temperature of from 100 to 115 C. or until it changed to a rich chocolate brown; in fact, it was found that even when this agar was apparently overcooked, luxurious growths were secured. Whether this result was due to the destruction of the natural immune bodies, or to a liberation of the hematin from the blood, or to both, remains to be settled. Suffice it to state that with this medium not only could subcultures be easily grown, but also primary cultures from lungs, sputum and postnares demonstrate the presence of *B. influenzae* in easily recognizable colonies. To obtain pure cultures of the pneumococci, human blood agar gave best results, while for vaccine, 2 per cent. glucose bouillon gave ample growths.

The streptococci were grown and gathered from blood agar, 15 per cent. human blood, centrifuged and washed (both washed and unwashed were tried with very little difference noted) and diluted in a 0.5 per cent. phenolized salt solution.

For the gram-positive bacteria the standardizing was done by using Wright's method and counting chamber; the influenza bacilli were counted by ratio with standardized pneumococci.

To arrive at a safe, though effective, dosage of the foregoing bacteria, it became necessary to ascertain if possible on laboratory animals the toxicity of each individually. For *B. influenzae*, the guinea-pig was used, first with dead, and later with live bacilli, neither producing any apparent serious effect in comparatively large doses (3 billion). This coincided with the results of Delius and Kolle's[4] experiments on laboratory animals.

For *Streptococcus hemolyticus*, volunteers were used, 60 million organisms producing no untoward symptoms. The report of Cecil and Austin covering their studies in connection with pneumococcic vaccination of over 12,000 men demonstrated that no ill effects were encountered, that large doses were necessary to give full protection, and that the degree of immunity depended more on the dosage than the interval.

Based on the foregoing considerations, the final composition of the vaccine for each cubic centimeter was decided on as shown in Table 1.

TABLE 1.—COMPOSITION OF MIXED VACCINE

	No. of Bacteria
B. influenzae, Rockefeller strain	5 billion
Pneumococcus Type I, various strains	3 billion
Pneumococcus Type II, regular and irregular, various strains	3 billion
Pneumococcus Type III, one strain	1 billion
Streptococcus hemolyticus, two strains	100 million

These were sterilized separately for an hour at a temperature of 56 C., and then mixed with 0.5 per cent. phenolized salt solution to make the desired amount.

In addition to the foregoing vaccine as suggested by the experiments of Whitmore, Fennel and Petersen,[5] an attempt was made to prepare a lipovaccine: Definite quantities of each culture in the proportions mentioned were removed from plates, dried at 55 C. for one and one-half hours, and then triturated by hand under sterile conditions for eight hours, being moistened with ether from time to time. When completed, microscopic examination revealed a homogeneous mass with no bacterial forms.

To weighed portions of this powder, a sterile mixture of 10 per cent. lanolin in oil of sweet almonds was added and again triturated for three hours; each cubic centimeter of this mixture contained 2 mg. of the bacterial powder.

The effects of this mixture were first tried on a guinea-pig, 1 c.c. being injected with no serious results. Next, five members of the laboratory force were each inoculated with 1 c.c. Their reactions were slightly more severe than the sixteen referred to later, but none lasted more than seventy-two hours. The number of their leukocytes was increased from 4,000 to 8,000, and their serums agglutinated *B. influenzae* 1:200. The injection caused considerable local induration lasting about ten days, but there was no abscess formation.

OBSERVATIONS ON THE VACCINE

Owing to the fact that there were no reports at that time on the use of a mixed vaccine against pandemic influenza, 100 volunteers were given 0.3 c.c. as an initial dose, followed after three days by 0.6 c.c. and two days later by 0.8 c.c. However, before this was done, the temperature of each man was taken and recorded, the urine examined, and the blood from all was used to make a white and differential count. From sixteen men blood was drawn to make agglutination tests with *B. influenzae*, pneumococcus and streptococcus. Eight hours after the first inoculation the temperatures were again taken, with these results:

Before: 98.6 F., 90 men; 99. F., 8 men.
After: 98.6 F., 70 men; from 99 to 100 F., 18 men; 101 F. and over, 5 men.

The white and differential counts evidenced appreciable increase in the polymorphonuclear leukocytes, as illustrated by Table 2.

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[3] Scheller: Handbuch der pathogenen Microorganismen 5: 1292, 1913.

[4] Delius and Kolle: Ztschr. f. Hyg. u. Infektionskrankh. 24, 1897.

[5] Whitmore, E. R.; Fennel, E. A., and Petersen, W. F.: An Experimental Investigation of Lipovaccines, J. A. M. A. 70: 427 (Feb. 16) 1918.

The reactions recorded twelve hours after the first injection were: trivial, 40; moderate, 53; severe, 8. Trivial signifies headache, very often combined with giddiness and malaise; moderate, headache, backache, chill and slight rise of temperature; severe, all the foregoing symptoms intensified by higher fever, depression and general asthenia associated with multiple pains, in some cases sufficient to require medical aid.

TABLE 2.—WHITE AND DIFFERENTIAL COUNTS

Before		After	
White Count	No. of Men	White Count	No. of Men
6,000 to 8,000	40	6 000 to 8,000	1
8,000 to 10,000	56	8 000 to 10,000	47
10,000 to 12,000	3	10,000 to 12,000	48
		12 000 to 16,000	3
Differential Count Polymorphonuclear		Differential Count Polymorphonuclear	
60 to 70 per cent.	51	60 to 70 per cent.	43
70 to 80 per cent.	46	70 to 80 per cent.	51

The blood of sixteen of these men was secured for agglutination with *B. influenzae* of the type with which they were inoculated, with the results given in Table 3.

Agglutinations with pneumococci and streptococci were unsatisfactory. There was no change in the urinary findings.

As it was considered that the results of the preliminary experiments were satisfactory, general inoculation began, October 12. The vaccine was administered subcutaneously at about the insertion of the deltoid muscle in doses of 0.5, 0.8 and 1. c.c. at three day intervals. In all, 11,179 persons were inoculated, composed of four distinct groups.

1. There were 4,950 persons in quarantine at the Naval Training Station, 171 being hospital corpsmen, transferred after a few days to duty in military and civilian hospitals for influenza cases.

2. At Mare Island Navy Yard there were 1,950 marines released after inoculation, ninety-nine hospital corpsmen on duty in the hospital, and forty civilian employees with unrestricted liberty in the adjacent cities.

3. At the Naval Training camp, San Pedro, Calif., there were 3,100 officers and men with liberty in Los Angeles and vicinity.

TABLE 4.—STATISTICAL DATA

Uninoculated Persons	Population	Influenza No. of Cases	Influenza Per Cent.	Mortality No.	Mortality Per Cent.	Inoculated Persons	Number	Influenza No. of Cases	Influenza Per Cent.	Mortality No.	Mortality Per Cent.
San Francisco and Oakland	625,000	33,065	5.3	3,035	9.2	San Francisco civilians	1,080	14	1.4	0	0.0
Mare Island Navy Yard	8,232	1,296	15.7	65	5.0	Marines at Mare Island	1,950	35	1.8	1	2.8
Nurses and attendants, San Francisco hospitals	550	186	33.8	4	2.1	Hospital corpsmen on duty in influenza wards	270	9	3.5	1	11.0
Los Angeles	600,000	9,124	1.5	612	6.6	Naval Camp, San Pedro	3,100	53	1.7	0	0.0

4. Finally, 1,040 civilian relatives and friends of the personnel of the Naval Training Station inoculated at our shore dispensary, living in San Francisco and vicinity, constituted the fourth group.

A careful record of all inoculated persons showed in the majority a moderate local induration, with some headache, general pains, and slight rise of temperature beginning about six hours after inoculation and abating within thirty-six hours. These symptoms were most marked following second injection. In no case did the constitutional symptoms persist after forty-eight hours.

RESULTS

By means of circular letters, personal investigations, official reports from localities, and from extended reports of inoculated persons during October and November, Table 4 was compiled. In discussing the results tabulated, we can safely omit from consideration the 4,950 men of the Naval Station because they were in quarantine during the height of the epidemic and therefore not exposed. No cases of pandemic influenza occurred during this period, and twenty-four days after release from quarantine, when there were still from 200 to 300 cases being reported daily in San Francisco, only fifteen cases of influenza developed in a personnel of 3,514. These fifteen cases were mild. There was no pneumonia and no fatality.

The inoculations of the 1,080 of the civilian population were completed October 16, which was twenty-one days after the epidemic began in San Francisco, and the incidence and mortality figures for the city represent the period of time, beginning with the inoculation and running until December 1, when the original epidemic subsided. They circulated freely in San Francisco and Oakland during the epidemic and in fifty-four instances assisted actively in the care of their stricken relatives, and apparently escaped the disease. Furthermore, the small number of this group who developed influenza had very light attacks.

The 1,950 marines were inoculated about October 20, about a week after the epidemic began, and were immediately released in Vallejo and San Francisco where the disease was at its height, and owing to the fact that statistical reports were not submitted to the Public Health Service, the personnel of the Mare Island Navy Yard seemed to furnish a fair comparison. Incidentally all of the severe cases developed within ten days after the last inoculation.

TABLE 3.—AGGLUTINATIONS

Before Inoculation	No.	Five Days Later	No.
No agglutination at any dilution	2	No agglutination at any dilution	2
Agglutination at 1:20	7	Agglutination at 1:200	14
Sug. agglutination at 1:100	2		
Sug. agglutination at higher dilutions	0		

The low incidence of the disease in the inoculated persons can only be appreciated when we compare with it the morbidity and mortality of the large population with whom they associated at the same period. We also ask attention to the low incidence of disease of our inoculated hospital corpsmen detailed in military and civilian hospitals in San Francisco, in comparison with the nonvaccinated civilian nurses exposed to the infection under identical conditions.

The 3,100 men from San Pedro Naval Camp were inoculated about November 15, at which time the epidemic was in its recrudescence in Los Angeles and vicinity, and the figures given represent only the cases reported in Los Angeles during the period of twenty-four days following inoculation of the men.

Additional evidence that the men responded to the inoculation of the vaccine was furnished by serologic tests conducted with the strain of *B. influenzae* that had been used in their vaccine. On account of the men being transferred, it was impossible to follow the same group of men in all tests. Agglutinations were made with serum diluted from 1:50 to 1:400; but basing our opinion on our comparative experience, we felt that an agglutination in a dilution of 1:100 should be considered positive.

In Groups 3, 4 and 5, agglutination was also attempted in similar dilutions with a local strain of *B. influenzae* obtained from routine throat cultures on the station during the quarantine. The results are shown in Table 5.

TABLE 5.—AGGLUTINATION TESTS

	No. of Men	Days after Inoculation	Agglutinations Positive	Agglutinations Negative
Group 1	16	5	14	2
Group 2	39	30	33	6
Group 3	11	40	1	10
Local strain	11	40	0	11
Group 4	10	50	5	5
Local strain	10	50	0	10
Group 5	6	70	2	4
Local strain	6	70	0	6

CONCLUSIONS

The facts presented undoubtedly indicate that a noteworthy degree of protection against influenza and its complications was obtained by means of a mixed vaccine freshly prepared from predominating etiologic bacteria. These observations should also encourage further work along the line of immunity against pneumonia. To this end an attempt is now being made to regroup the Type IV pneumococcus with the object of adding it to a vaccine when needed.

ABDOMINAL COMPLICATIONS OF THE INFLUENZA EPIDEMIC AT CAMP CUSTER, MICH.

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The abdominal complications of the epidemic of influenza in October, 1918, present problems of interest in diagnosis and treatment. The clinical pictures varied so greatly that a grouping of the cases will be of value.

ABDOMINAL RIGIDITY AND TENDERNESS

The question frequently arose as to whether the boardlike rigidity and tenderness of one or both upper quadrants of the abdomen was due to acute abdominal affection or to muscle spasm from lesions of the chest. Some of these cases were seen in the first twenty-four hours of the disease, before the physical signs of a pneumonia or of a pleurisy were sufficiently evident to make a positive diagnosis, all available methods, including the roentgen ray, being employed. The upper abdominal pain, with or without accompanying rigidity, which is seen in acute thoracic disease, has always been held to be reflex. Two cases of pneumonia following influenza showed at necropsy localized fibrinous subphrenic peritonitis of limited extent early in the disease, and it seems certain that there is an actual pathologic basis for at least some of these cases of upper abdominal rigidity.

PAIN IN THE RIGHT LOWER QUADRANT

A number of patients were either admitted directly to the surgical wards or seen in consultation in the medical wards for pain in the right lower quadrant. Pain of a dull, aching character referred to the right lower quadrant was the most prominent feature. On examination there was only slight rigidity in a small number, and in the majority there was tenderness over the region of the appendix, but no rigidity. These abdominal signs and symptoms might ordinarily be diagnosed as appendicitis. However, it was repeatedly observed that the local abdominal signs disappeared in a short time; more rarely they persisted and increased in severity so that operation was deemed imperative. This group occurred in influenza patients, nearly all of whom later showed demonstrable signs of bronchopneumonia.

Another group, occurring during the epidemic, neither accompanied nor followed by pneumonia, was made up of a small number of fulminant cases of appendicitis. Operation seemed imperative and was performed under local anesthesia with good results.

PERITONITIS

Of 140 cases of bronchopneumonia following influenza coming to necropsy in all stages of the disease, six (4.2 per cent.) have shown acute peritonitis. Of the six cases, two manifested themselves as local inflammations in the upper left quadrant and were characterized by flakes of fresh fibrin adherent to the spleen and the contiguous surface of the diaphragm. The four remaining cases were generalized. One was extensive, 1,000 c.c. of thick greenish yellow pus being present in the abdomen. Another showed only a few cubic centimeters of pus, and, though generalized, the site of the greatest change was on the adjacent surfaces of the liver and diaphragm. In a third case there was no fluid, but a delicate coat of fibrin formed a layer over the surface of the stomach and the intestinal coils. A fourth case of generalized peritonitis will be referred to under subphrenic abscess. The fact that the process was twice localized to the upper quadrant, and once, while occurring generally distributed throughout the peritoneum, appeared most advanced over the hepatic surface, suggests an origin by direct extension through the diaphragm. In three cases there was a concurrent accumulation of pus on the corresponding pleural side of the diaphragm. On the other hand, a bacteremia was demonstrated in two of the cases during life, and in the heart's blood at necropsy of all except one (this patient had previously been embalmed). In every instance a hemolyzing streptococcus was recovered. In two of these cases pericarditis was an accompanying finding, and in one, jaundice was present. In addition to a bronchopneumonia, which was in most cases resolving, pleurisy was present. It seems certain, therefore, that with hemolytic streptococci in the blood stream and the accompanying involvement of other serous membranes, the peritoneal infection was hematogenous in origin and did not in all cases originate by the more difficult transdiaphragmatic route. In none of these cases was the appendix or gallbladder the site of any change except on the serous coat, as an incident to the general infection of the peritoneum.

After the first inflammatory reaction, a streptococcus infection is prone to proceed even to the point of a large amount of purulent exudate with only a few localizing symptoms or signs. Extensive exudate in the chest cavity is at times found only after the most critical routine examination when there are no signs or symptoms referable to the chest. Similarly a diffuse purulent peritonitis may be present as a part of a generalized infection without attracting especial attention to its presence through the symptoms usually associated with this condition.

In five of the six cases of peritonitis that were found at necropsy, a diagnosis of such a complication was not made during life, although these patients were carefully and repeatedly examined with the possibility of abdominal lesions in mind. The peritonitis was not secondary to any demonstrable abdominal focus, but apparently was merely one manifestation of generalized infection, which frequently was also evident in pleura and pericardium. Suppurative peritonitis was not found in necropsies in the early fulminating cases of the epidemic, but appeared as a part of the late postpneumonic complications, five of the six cases being found in the last thirty necropsies. The early occurrence of deaths did not afford time for the development of this condition. A similar group of cases was noted during the severe infections in the early part of 1918.

SUBPHRENIC ABSCESS

Two cases occurred during the latter portion of the present epidemic which show the necessity of thorough routine examinations:

REPORT OF CASES

Case 1.—A soldier, admitted, Oct. 8, 1918, with bronchopneumonia involving the right and left lower lobes, complained, November 25, of severe pain in the left upper quadrant of the abdomen. There was slight distention but no rigidity. November 26, 425 c.c. of amber fluid were aspirated from the left pleural cavity, cultures from which showed no growth. November 29, 75 c.c. of pus were aspirated from the same pleural cavity and showed a pure culture of staphylococci. The following day the left chest was again aspirated and a serohemorrhagic fluid obtained through the ninth intercostal space, between the posterior axillary and scapular lines. On pushing the aspirating needle slightly deeper, a thick yellow pus was obtained. Roentgenoscopy had revealed the presence of fluid in the left pleural cavity; hence the outline of the diaphragm on this side could not be seen. A costectomy was performed over the area from which the pus had been aspirated, and 1,500 c.c. of serohemorrhagic fluid were evacuated. The diaphragm was seen to bulge upward and, for this reason, the presence of a subphrenic abscess on this left side was suspected. December 4, the roentgen ray revealed a dense shadow from the sixth rib downward on the left side, and the domes of the diaphragm on the two sides were at about the same level. The normal clear area below the left dome, due to the gas bubble in the stomach, was absent. The tenth rib was resected in the midaxillary line after exploratory puncture had confirmed the diagnosis of a subphrenic abscess. Following the needle, which had been left in situ as a guide, the pleural reflection was pushed upward, an incision made through the muscles of the diaphragm, and 125 c.c. of a dark pus were evacuated. The soldier had no recurrence of elevated temperature and is making an uneventful recovery.

Case 2.—A soldier, admitted, Oct. 8, 1918, with a diagnosis of bronchopneumonia of all lobes of the right lung, in whose case, October 27, an additional diagnosis was made of acute cholecystitis and cholangeitis, developed a facial erysipelas, the following day, and remained in a very septic condition until November 23, when he was seen by a surgeon in consultation on account of pain in the left upper quadrant. There was dulness over the anterior portion of the left side of the chest in the mammary line just above the costal arch, and an obliteration of Traube's semilunar space. There was also very slight excursion of the left lower lobe into the costophrenic angle. There was also evidence of free fluid in the peritoneal cavity, but no rigidity or tenderness. Roentgenographic examination revealed a shadow in place of the normal gas bubble beneath the left dome of the diaphragm, and displacement of the heart toward the right. The right half of the diaphragm showed such a degree of elevation that a right subphrenic abscess was thought of; but on exploration with a needle, no pus was obtained. Pus, however, was obtained over the left lower chest in the anterior axillary line, and about 90 c.c. of chocolate colored pus were evacuated through an incision in the eighth interspace from the left subphrenic region. The symptoms of a generalized sepsis supervened, and the patient died a few days later. At necropsy the lower lobe of the right lung was found adherent to the diaphragm, and that of the left lung was covered with a thin yellowish exudate. Throughout the liver were scattered many small abscesses. A generalized peritonitis with 1,500 c.c. of free greenish yellow fluid confirmed the clinical diagnosis. The left subphrenic region was walled off, and the origin of the pus obtained at operation was seen to be from an extensive suppurative pylephlebitis. There had evidently been a direct infection of the left subphrenic region from rupture of one of the abscesses in the left lobe of the liver. The gallbladder and the appendix showed at this time no evidence of disease. A number of the mesenteric lymph nodes contained abscesses. A gram-negative bacillus which did not give the typical reaction of the colon group was obtained from the lungs, liver and peritoneum at necropsy.

JAUNDICE

The incidence of jaundice as seen postmortem has been about what one is accustomed to find in fatal cases of lobar pneumonia. Jaundice, in most cases with a marked discoloration of the skin and the mucous and serous membranes, has been present in 7 per cent. of 140 necropsies. In all except one, a bacteremia was demonstrable; *Streptococcus hemolyticus* was present in three, *Streptococcus viridans* in three, and pneumococcus Type IV in two cases. In only one case was there swelling of the ampulla of Vater. In this instance the mucous membrane of the gallbladder and the ducts was slightly swollen and inflamed, being most marked in the cystic duct. The swelling was not sufficient, however, to interfere with the free passage of bile to the duodenum. In all cases, the intestinal contents showed that bile was freely passing into the intestine, and stools examined during life gave no evidence of obstruction to the flow of bile.

SPLEEN

The spleen in the majority of cases was but very little enlarged. It was moderately firm on section and red. Microscopically a rather marked congestion was the predominating feature.

KIDNEY

Cases of true acute nephritis were extremely rare. Acute congestion of the kidneys was frequent. In one case, multiple abscesses of the kidney were a part of a hemolytic streptococcal septicemia, which had also caused a severe infection of one of the toes. Pyelitis demonstrated by ureteral catheterization was occasionally found.

Both renal and perirenal localization may be so severe as to endanger life, either during the stage in which some pulmonary condition is present, or independently of any other demonstrated focus, as is well illustrated in the following case of perirenal infection:

assumed a normal condition. She was instructed to return to the office at intervals of a week, or less time if necessary, for treatment, and was given a supply of lutein tablets to be taken in doses of 10 grains three times daily as long as required.

Subsequent injections of pollen extract (prepared in bulk) were given at the office: October 31, 0.01 mg.; November 4, 0.02 mg., at which time she exhibited a mild recrudescence of the rash on her face and neck, which she attributed to overexertion at her household duties and to indiscretion in diet; November 15, 0.02 mg.; November 20, 0.02 mg.; November 25, 0.04 mg.; December 3, 0.04 mg.; December 16, 0.04 mg.; January 6, 0.08 mg.; January 21, 0.12 mg.; February 28, 0.12 mg.

With the exception of a recurrence on November 4, the patient has been free from the skin eruption since leaving the hospital, although on two occasions she reported having experienced a slight stinging of the skin following unusual exertion. It has now been more than thirty days since the last injection was given, at which time she stated that in the future she would come for treatment only when she felt a recurrence of her symptoms. As she has not returned up to the present date, we may assume that the injections have afforded complete relief for a period of at least a month. Even more remarkable is the fact that she has been able to do all of her work, such as cooking, washing and housecleaning, and to eat some meat and other solid foods, which her condition had prohibited during the past year. She continues to take the ovarian extract and states that her periods are now regular and normal.

COMMENT

As to the permanence of results in this case, I am not prepared to say, as it might require quite an extended period of time, through the various seasons of the year, to determine all of the specific pollens to which the patient is sensitized. However, two conclusions may be advanced, namely: (1) that the basis of treatment of certain skin diseases with pollen extracts is scientific, being founded, as is bacterin therapy, on the theory of the production of antigens and antibodies, and should offer prospects of immunity or cure comparable to those of vaccines in general, and (2) that the immediate and complete relief afforded in the instance reported indicated a definite response to the injections of a foreign protein in the form of a pollen extract. If this method, by hypodermic injections at intervals varying from one to two weeks, proves applicable to other cases—which I see no reason to doubt, when a proper diagnosis is made—it is far preferable to the continuous ingestion and topical application of various medicinal remedies. I myself believe that when all of the specific pollens to which the individual is susceptible can be ascertained, this method of treatment offers the probability of relief and the possibility of a cure. If one can determine from the history of a patient, or from a botanical survey of his home surroundings the offending plants, an extract for both diagnostic and therapeutic use could be prepared.

I am now administering the spring pollen extract to a patient troubled with a rash apparently identical with that in the case reported, though milder, and after the first injection, she states that she has experienced decided relief. In all, she has received four injections, and since the last—now four days ago—the eruption has entirely disappeared, not returning even after perspiring, when the eruption would formerly always reappear. The size of the last dose was 10 c.c., representing 0.2 mg. of pollen protein-nitrogen, as she did not respond so readily to doses of 0.1, 0.05 and 0.02 mg. No results had been achieved by the previous administration of the fall extract in this case. This patient informs me that she has noticed that her skin is very sensitive to contact with tomato leaves, but as yet I have not applied the extract of this plant for diagnosis. She was, however, by the intradermic test susceptible to orchard grass, but was not susceptible to other spring and fall pollens.

The only negative phase I have observed after pollen extract injections was a slight headache.

ACQUIRED IMMUNITY TO INFLUENZA

AS INDICATED BY A RECURRENT EPIDEMIC IN AN INSTITUTION

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During the early part of November, 1918, there occurred an epidemic of influenza in the State Training School for Girls at Mitchellville, Iowa. At this time seventy-six of the girls had the disease. The second epidemic occurred in January.

The State Training School for Girls has approximately 180 students. They are housed in six cottages, about thirty girls residing in each cottage. By strict isolation, the epidemic was limited entirely to Cottages 2, 3 and 4. This epidemic subsided about November 15. From this time until January 6, the institution was entirely free from influenza. During this time there was in force rigid quarantine against the outside world.

It has for years been the practice of the institution to isolate in a detention hospital for two weeks all new arrivals. This practice has given the institution an enviable record so far as acute, infectious diseases are concerned.

One of the teachers in the institution was permitted to spend the week end of January 5-6 away from the institution. On the 6th and 7th she complained of feeling ill; she did not, however, go to bed, but continued her routine duties as teacher in the training school. This teacher lived in Cottage 6.

January 8, four students who were housed in Cottage 6 were sent from school sick. They had opportunity before being sent from school to disseminate the infectious agent to all students who attended school on that date. All the cottages of the institution were represented in the school in which these cases developed. Therefore all the families were theoretically equally exposed to the infectious agent.

Additional cases developed very quickly. January 10, twenty-nine cases were reported; the 11th, sixteen cases; the 12th, twelve cases; the 13th, six cases; the 14th, seven cases; the 15th, three cases; the 16th, three cases; the 19th, one case; the 23d, one case; total, eighty-two cases.

The distribution according to families was: Family 1, 16 cases; Family 2, 3; Family 3, none; Family 4, 2; Family 5, 33; Family 6, 28.

We see, therefore, that the epidemic is practically limited to the cottages that had escaped the ravages of the November epidemic. Of those girls who developed the disease in January, seven were recent arrivals, and two failed to develop the disease in November, although presumably exposed to the infectious agent at that time.

In the January epidemic there were few complications. Convalescence was much more rapid than in the first epidemic. Two patients developed otitis media. One of these had severe laryngitis. There were no fatalities following the January epidemic, whereas there were two deaths among the seventy-six cases that occurred in November.

The outstanding feature of the epidemic was the fact that those who had recovered from influenza were immune from a second attack of the disease. This evidence tends to prove that immunity to influenza can be acquired by having an attack of the disease, and that the duration of this acquired immunity is at least two months.

The students in this institution were all between 12 and 18 years of age. The fact that 158 out of 180 of these young people developed the disease also suggests that there is a small percentage, approximately 12 per cent., who are naturally immune to influenza.

THE ULTRAVIOLET RAYS IN THE TREATMENT OF CHILBLAIN

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Chilblain, or erythema pernio, is a form of erythema that appears in the late fall and winter months in individuals with a poor peripheral circulation and a disturbed vasomotor mechanism. In the mild cases there is merely a slight dusky or dark red discoloration of the regions with feeble peripheral circulation, as the tip of the nose, the lobes of the ears, the fingers, the toes, the heels and the cheeks. Usually, with the erythema, there is an exudation into the tissues resulting in the formation of papules, tubercles and plaques. In the severe cases, vesicles and bullae develop on top of the solid lesions. The vesicles, when ruptured or torn, give rise to erosions, ulcers and rarely to sloughing areas.

In the mildest cases there is no subjective symptom except discoloration of the skin. In the moderate and the severe cases the patients complain of mild, moderate or intense itching, burning or pain, and tenderness on pressure. The condition tends to run a prolonged course and is often rebellious to treatment. It persists at times for months until the beginning of warm weather. Then it disappears spontaneously, but with the coming of another winter it tends to return.

REPORT OF CASES

The winter of 1917-1918 was unusually severe. The number of patients with chilblain applying for treatment was consequently more numerous than in former years. The types of cases were often severe, persistent and obstinate in nature.

In one case which was particularly obstinate, after failing to obtain relief by the routine methods of treatment, I was led to try the ultraviolet rays as a therapeutic measure. The result was so gratifying that the rays were administered in two other cases with corresponding good results. It is therefore deemed justifiable to report these cases and to suggest this method of treatment for chilblain.

CASE 1.—A. B., a man, aged 25 years, a native of the United States, contracted syphilis in June, 1915, and had received since then regular antisyphilitic treatment. Because of his occupation he was constantly exposed to cold drafts and to frequent changes of atmospheric temperature. In November, 1917, he was attacked by severe chilblain. There developed rapidly on all the toes, the heels of both feet and the external surfaces of the feet, numerous purplish-red papules, tubercles and plaques, from the size of a small pea up to the size of a silver half dollar, surmounted by vesicles and erosions. Treatment failed to relieve or prevent the development of lesions, and the patient was compelled to stop work. One afternoon, each affected area was exposed for ten minutes to the ultraviolet rays emanating from a quartz, mercury vapor lamp, the quartz filter being placed at a distance of 10 inches from the skin. The next morning the pain and itching had ceased, and erosions showed a tendency to heal. At the end of a week all that remained of the condition was a slight, dusky discoloration. There has been no recurrence this winter.

CASE 2.—During the first week of December, 1917, N. R., a woman, aged 24, a clerk by occupation and a native of the United States, was referred by Dr. S. B. for treatment of dandruff and loss of hair from the scalp. Examination revealed besides the pityriasis steatodes of the scalp, evidence of anemia, hyperthyroidism, and a moderate form of erythema pernio of the dorsum of the fingers. The patient stated that chilblain had been present for two months and that she had had mild attacks during the two preceding winters. Her hands were exposed to the ultraviolet rays while the scalp was receiving treatment from the Heraeus sun lamp. After two ten-minute exposures, at a distance of 20 inches, administered at a weekly interval, there was a complete disappearance of the lesions.

CASE 3.—B. S., born in Russia, an unmarried woman, aged 22, referred for treatment by Dr. M. S., complained of a painful bluish-red eruption of the fingers of both hands, which she considered an infection subsequent to manicuring of the nails. The patient was well nourished but suffered from a poor vasomotor mechanism, as revealed by a marked dermatographia, excessive flushing, hyperhidrosis and a second degree erythema pernio of the dorsum of the fingers. The treatment advised in this case included a nonirritating diet, catharsis, iron and arsenic internally, massage of the fingers, and exposures to ultraviolet rays. Three exposures, each of ten minutes' duration and at weekly intervals, were administered. The pain was alleviated after the first séance, and the lesions disappeared after the third treatment.

COMMENT

The invisible ultraviolet and infra-red rays are to the right and left of the spectrum. The red and infra-red rays are heat producing and penetrating. The violet and ultraviolet rays produce a minimum of heat but possess marked chemical properties, are readily absorbed and are of value for therapeutic purposes. It has been shown that the therapeutic value of the sun is derived from the presence of the ultraviolet rays. Chilblain is essentially an erythema occurring in those with poor peripheral circulation and disturbed vasomotor tone. The good results obtained with the ultraviolet rays in this disease are probably due to the direct effect of the rays on the peripheral vessels and blood stream. It is therefore suggested that the rays be employed in the treatment of the condition, but not to the exclusion of other local and general measures. They are not only of value in removing the lesions, but if used sufficiently early in those who have had previous attacks they may prevent a recurrence.

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BASAL-CELL EPITHELIOMA *

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In the second of a series of articles on epithelioma published in 1918, MacCarty and I[1] classified such tumors into six types or apparent types and described each. The tumor commonly known as the rodent ulcer has been termed basal-cell epithelioma because its cells tend to differentiate to a form similar to the cells of the basal or germinative layer of the epidermis. This type, which, like other epitheliomas, may be found on any surface covered with protective epithelium, develops practically always above the clavicle. The majority of its lesions attack the cheek, the eyelids, the nose, the forehead, the ear, the canthi and the temporal regions.

Basal-cell epithelioma often appears in the skin as an elevated, whitish nodule which resembles an adenoma or cyst of a sebaceous gland, as an ulcer with indurated borders, or as a scaly lesion. The latter type, which exfoliates its superficial layers to a shiny surface but which shows little tendency to heal completely (Figs. 4, 5, 6, 7, 8 and 9), is usually found in persons who are exposed to intense sunlight. The cells of the basal-cell epithelioma vary greatly in morphology and in arrangement. They may be long and slender, short and thick, round, oval, or spindle shaped. In arrangement they may be alveolar or glandlike and resemble the structure of the thyroid; they may present a cactus-like appearance, a diffuse or circumscribed solid mass of cells, or a combination of these different types (Figs. 10, 11, 12, 13, 14, 15, 16 and 17).

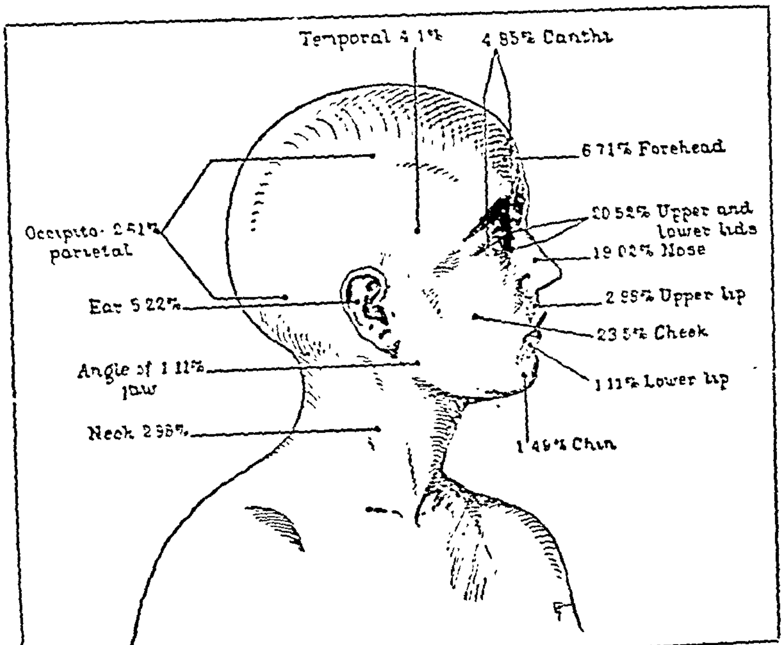

Fig. 1.—Location and percentage of basal-cell epitheliomas above the clavicle.

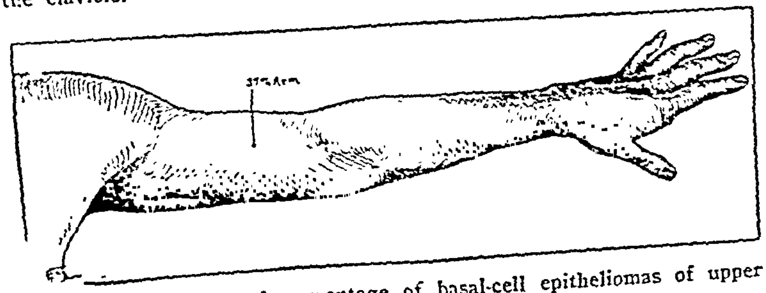

Fig. 3.—Location and percentage of basal-cell epitheliomas of upper extremity.

Since, as a matter of fact, all tumors arising in protective epithelium are basal-cell epitheliomas, their cellular differentiation is their only distinguishing feature. Because of some common characteristics, many basal-cell epitheliomas are undoubtedly diagnosed endotheliomas, alveolar sarcomas, round-cell sarcomas, spindle-cell sarcomas, and adenocarcinomas. Moreover, the cells of a pure basal-cell epithelioma are not supposed to contain prickles or spines; but because these do sometimes appear, it is often difficult to determine whether an epithelioma should be called a basal-cell or squamous-cell epithelioma, especially since prickle cells are found in so-called basal-cell epitheliomas, and basal cells can always be seen in squamous-cell epitheliomas. It now seems to be a well established fact that a basal-cell epithelioma can change into a squamous-cell epithelioma, or at least into an epithelioma in which the squamous cells predominate. We know, beyond a doubt, that basal cells and squamous cells may be shown intimately connected in a neoplasm (Fig. 18), and this may account

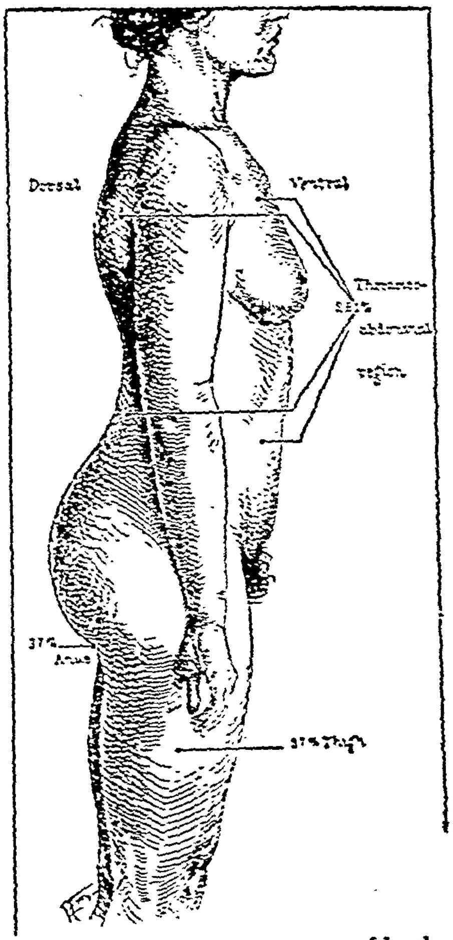

Fig. 2.—Location and percentage of basal-cell epitheliomas of trunk and thigh.

TABLE 1.—BASAL-CELL EPITHELIOMA

	No.	Per Cent.
	268	
Patients	...	13.4
Percentage of 2,000 cases of general epithelioma	165	61.6
Males	103	38.4
Females	56.7	
Average age, years	87	
Oldest, years	23	
Youngest, years		
FAMILY HISTORY OF MALIGNANCY	17	10.3
Males	12	11.65
Females	29	10.82
Total		
PERSONAL HISTORY		
History of previous mole, wart, pimple, eczema, scab,	...	37.1
ulcer, etc.	...	9.3
History of injury	7 1/12	
Average duration of lesion, years	45	
Longest duration of lesion, years	5	
Shortest duration of lesion, months	2	
Average greatest diameter of lesions, cm.	12	
Greatest diameter of lesion, cm.	.5	
Smallest diameter of lesion, cm.		
OCCUPATION	82	56.16
Males:	8	5.47
Farmer	7	4.79
Laborer	6	4.10
Carpenter	6	4.10
Merchant	37	25.35
Real estate dealer		
Miscellaneous (26 occupations)		
	39	43.33
Females:		
Farm workers		

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* From the Department of Surgical Pathology, Mayo Clinic.

* Read before the Southern Minnesota Medical Association, Mankato, Jan. 20, 1919.

1. Broders, A. C., and MacCarty, W. C.: Epithelioma, Surg., Gynec. & Obst. 27: 141 (Aug.) 1918.

for the contention of some pathologists that basal cell epitheliomas do occasionally metastasize.

In the series of cases here reported, none have been included without a thorough microscopic examination. In distinguishing between cases that should be classified as basal-cell epithelioma and those that should be classified as squamous-cell epithelioma, the following rule has been adhered to: If the majority of the cells of the epithelioma are of the squamous-cell type, it is classified as a squamous-cell epithelioma; but if the majority are of the basal-cell type, it is classified as a basal-cell epithelioma.

TABLE 2.—LOCATION OF THE LESION

	No.	Per Cent.
Single lesion	252	
Multiple lesions	16	
Cheek	...	23.5
Eyelids	...	20.52
Nose	...	19.02
Forehead	...	6.71
Ear	...	5.22
Canthi	...	4.85
Temporal region	...	4.10
Neck	...	2.98
Upper lip	...	2.98
Occipitoparietal region	...	2.61
Thoraco-abdominal region, ventral and dorsal	...	2.61
Chin	...	1.49
Angle of jaw	...	1.11
Lower lip	...	.37
Arm	...	.37
Anus	...	.37
Thigh	...	.37

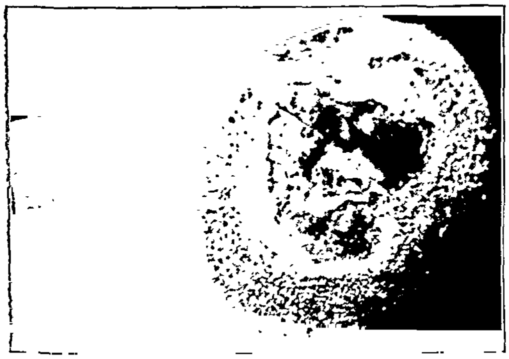
Fig. 4 (A 50531).—Basal-cell epithelioma of scalp.

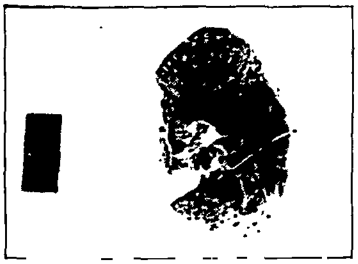
Fig. 5 (A 55948).—Basal-cell epithelioma of nose.

TABLE 3.—TREATMENT

PREVIOUS TREATMENT OF LESION ELSEWHERE	Per Cent.
One or more treatments; acids (nitric and hydrochloric), carbon dioxid, copper sulphate, electricity, paste, radium, silver nitrate and roentgen ray	27.23
One or more operations	20.14
Operation without being treated with acids, carbon dioxid, etc., before, at, or after operation	14.55
Treatment with acids, carbon dioxid, etc., without operation	21.64
Operation and treatment with acids, carbon dioxid, etc	36.19
TREATMENT AT MAYO CLINIC	
Excision with knife (one)	48.13
Excision with knife immediately followed by cautery (one)	26.86
Excision with cautery (one)	4.47
Miscellaneous (knife, cautery, roentgen ray, radium)	3.73
Excisions with knife immediately followed by cautery (two or more)	2.98
Excision with knife immediately followed by cautery and later by cautery (one)	2.98
Excision with knife (two or more)	2.23
Cautery (once)	2.23
Excision with knife followed later by cautery (one)	1.86
Excisions with cautery (two or more)	1.48
Cauteries (two or more)	1.11
Inoperable	1.86

There is, however, one tumor classified by some pathologists as a basal-cell epithelioma which is not included in these statistics: as we term it, a basal-cell-like epithelioma. This tumor occurs in the nose, in the pharynx, in the antrum of Highmore, in the parotid gland, in the cavity of the mouth, and in similar places. Although it is of long duration and has a microscopic structure similar to that of the basal-cell epithelioma, the trained eye will detect a difference; also, such tumors will metastasize, while the basal-cell epithelioma which occurs on the outer surface of the body is not supposed to do so.

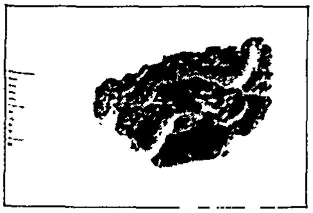
Fig. 6 (A 33173).—Basal-cell epithelioma of eyelid.

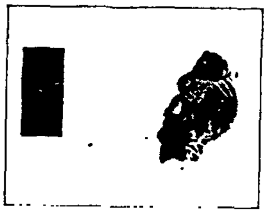
Fig. 7 (A 96196).—Basal-cell epithelioma of eyelid.

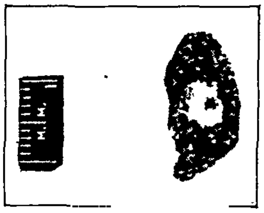
Fig. 8 (A 98228).—Basal-cell epithelioma of forehead.

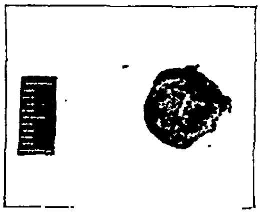
Fig. 9 (A 59758).—Basal-cell epithelioma of cheek.

In presenting this series of cases of basal-cell epithelioma, I have endeavored to classify the findings as briefly as possible, and, at the same time, to bring out the most important points. Its chief object is to present in tabulated form a collective history of the cases, so as to furnish data of the initial appearance, clinical manifestations, treatment, and ultimate fate of the basal-cell epithelioma. As the patients whose cases are tabulated here came to the Mayo Clinic between Nov. 1, 1904, and July 22, 1915, which period antedates the active use of radium

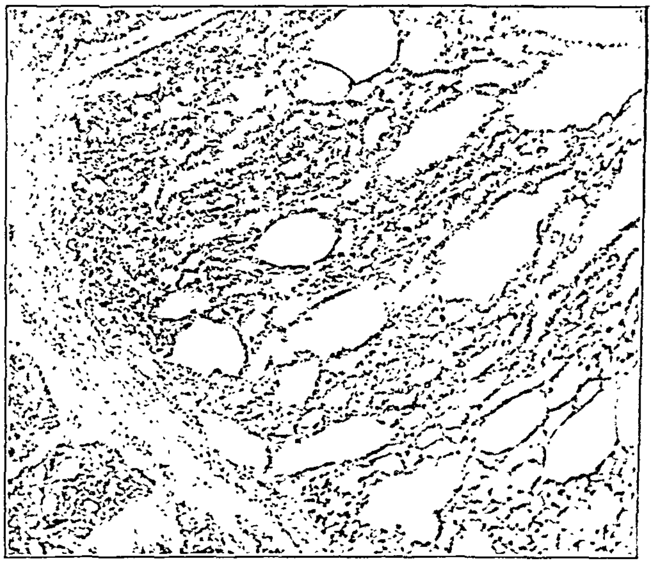
Fig. 10 (A 38151).—Basal-cell epithelioma of the outside of the nose. Note the close resemblance to thyroid.

in the treatment of this type of neoplasm, practically no account is given in this article of our experience with the curative properties of radium.

SUMMARY

1. Our present series of cases represents 13.4 per cent. of 2,000 cases of general epithelioma.

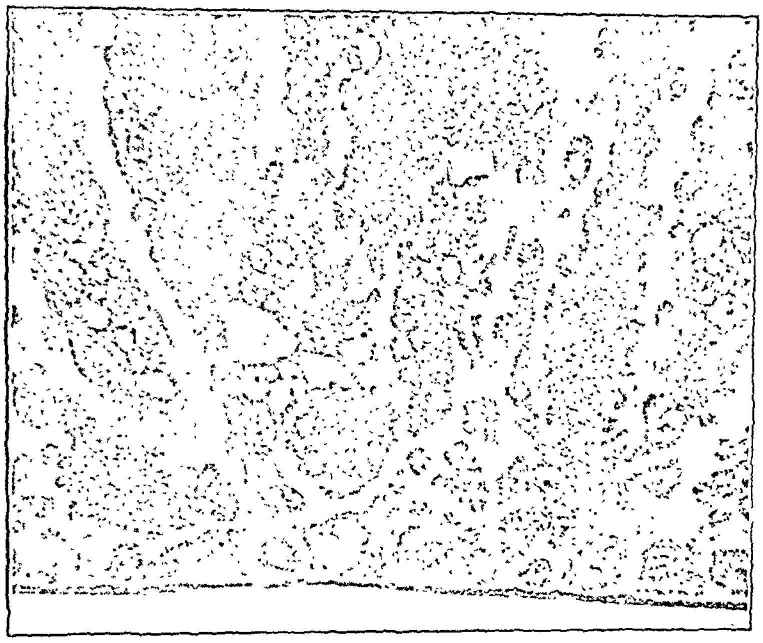

Fig. 11 (A 33009).—Basal-cell epithelioma of forehead, showing glandlike and solid areas.

2. Basal and squamous cells can be shown intimately connected in a neoplasm.

3. It seems to be a well-established fact that a basal-cell epithelioma can change into a squamous-cell epithelioma, or at least into an epithelioma in which the squamous cells predominate.

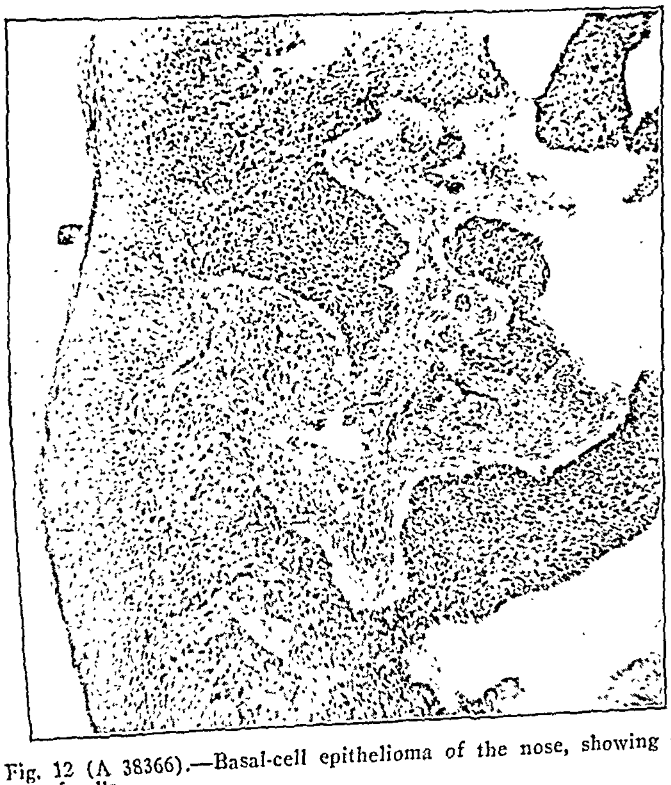

Fig. 12 (A 38366).—Basal-cell epithelioma of the nose, showing solid plugs of cells.

4. Basal-cell epithelioma occurs more often in males than in females, the proportion being about 3:2 in favor of the former.

5. The disease occurs in patients past middle life; their average age is 56.7 years.

6. It occurs more often in farmers than in any other class of people.

TABLE 4.—ULTIMATE RESULT

	No.	Per Cent.
Patients heard from	145	54.10
Patients living	110	75.86
Patients dead	35	24.13
CONDITION OF LIVING PATIENTS		
No recurrence	83	75.45
Slight recurrence	22	20
No improvement	5	4.54
TREATMENT IN CASES IN WHICH THERE WAS NO RECURRENCE		
One excision with knife	38	45.77
One excision with knife followed immediately by cautery	24	28.91
One excision with cautery	8	9.62
Miscellaneous (various combinations of excisions and cauteries)	7	8.43
Two excisions with knife	3	3.61
One excision followed immediately by cautery and later by another cautery	3	3.61
Total	83	
Average greatest diameter of tumor, cm.	1.75	

Of the 83 living patients with a good result, 25 (30.12 per cent.) were either operated on or treated with acid, carbon dioxid, etc., elsewhere.

Length of time since last operation or only operation:

1 year and more	2 cases	7 years and more	5 cases
2 years and more	2 cases	8 years and more	3 cases
3 years and more	17 cases	9 years and more	3 cases
4 years and more	15 cases	10 years and more	8 cases
5 years and more	13 cases	11 years and more	1 case
6 years and more	9 cases	12 years and more	4 cases
		13 years and more	1 case
Average: 6 years, 1.6 months.		Total	83 cases

	No.	Per Cent.
TREATMENT IN CASES IN WHICH THERE WAS SLIGHT RECURRENCE		
One excision with knife	9	40.90
One excision with knife followed immediately by cautery	6	27.27
Miscellaneous (various combinations of excisions and cauteries)	5	22.73
Two or more excisions with cautery	2	9.09
Total	22	
Average greatest diameter of tumor, cm.	2	

Of the 22 living patients with a fair result there were 13 (59.09 per cent.) either operated on or treated with acid, carbon dioxid, etc., elsewhere.

	No.	Per Cent.
TREATMENT IN CASES IN WHICH THERE WAS NO IMPROVEMENT		
Miscellaneous (various combinations of excisions and cauteries; one patient refused operation and was treated with roentgen ray)	5	
Average greatest diameter of tumor, cm.	3.75	

Of the 5 living patients with a bad result there were 4 (80 per cent.) either operated on or treated with acid, carbon dioxid, etc., elsewhere.

TABLE 5.—MORTALITY

	No.	Per Cent.
Average age at time of death, years	69	
Oldest, years	91	
Youngest, years	48	

Average length of life after the last or only operation, 4 years, 3.6 months.

	No.	Per Cent.
CAUSE OF DEATH ACCORDING TO RELATIVE OR HOME PHYSICIAN		
Basal-cell epithelioma	11	31.42
Heart disease	5	14.28
Carcinoma of stomach	3	8.57
Apoplexy	3	8.57
Carcinoma of *colon*	1	2.85
Carcinoma of liver	1	21.85
Carcinoma of uterus	1	2.85
Carbuncle	1	2.85
Cold and bronchial obstruction	1	2.85
Diabetes	1	2.85
Gangrene of foot	1	2.85
Hemorrhage of throat	1	2.85
Unknown	5	14.28
Total	35	
Average age of patients who died of basal-cell epithelioma, years	59.7	
Oldest, years	79	
Youngest, years	48	
Length of life after the last or only operation, years	4.12	
Average greatest diameter of lesions of patients known to be dead, cm.	2.67	
Average greatest diameter of lesions of those who died of basal-cell epithelioma, cm.	4.32	
TREATMENT OF PATIENTS WHO DIED		
One excision with knife	18	51.42
One excision with knife immediately followed by cautery	11	31.42
Miscellaneous (various combinations of excisions and cauteries, one case inoperable)	6	17.14
TREATMENT OF PATIENTS WHO DIED DUE TO BASAL-CELL EPITHELIOMA		
One excision with knife	4	36.36
One excision with knife immediately followed by cautery	4	36.36
Miscellaneous (one inoperable)	3	27.27

Fifteen (42.85 per cent.) of the 35 patients known to be dead were either operated on or treated with acids, carbon dioxid, etc., before entering the Mayo Clinic.

	No.
COMPLICATIONS IN THREE FATAL CASES	
Carcinoma of the breast	1
Carcinoma of the colon	1
Carcinoma of the body of the uterus	1

7. A family history of malignancy and a personal history of injury play a negligible part.

8. Previous mole, wart, pimple, eczema, scab, ulcer, etc., are associated in 37.1 per cent. of the cases.

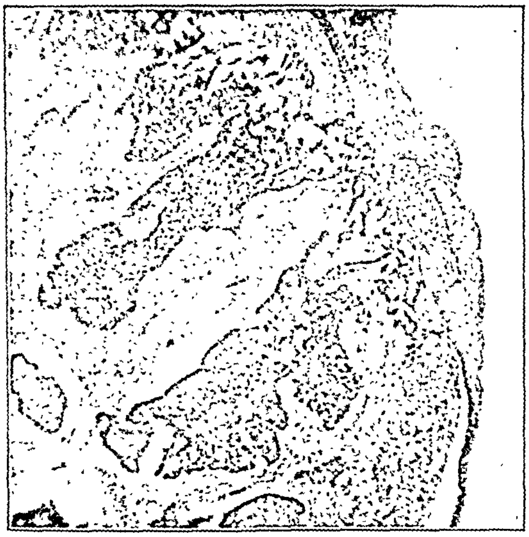
Fig. 13 (A 71769).—Basal-cell epithelioma of the cheek similar to Figure 11.

9. The duration of the lesion shows a marked variation; it extends from three months to forty-five years, and averages seven years and one month.

10. Ninety-six and twenty-eight hundredths per cent. of all the lesions occur above the clavicle.

11. Thirty-six and nineteen hundredths per cent. of all the patients had been either operated on or treated with acids, carbon dioxid, etc., before entering the Mayo Clinic.

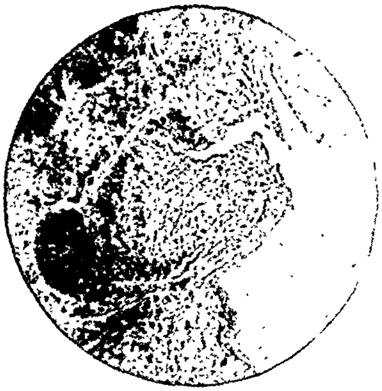
Fig. 15 (A 98228).—Basal-cell epithelioma of forehead; same as Figure 8.

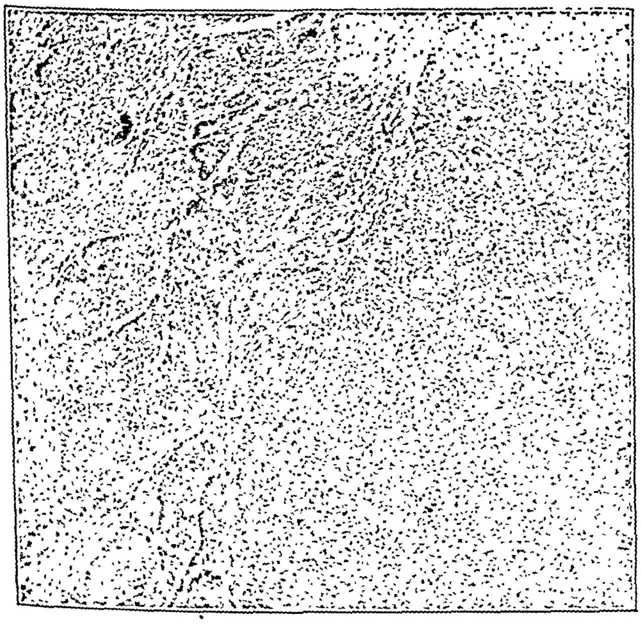
Fig. 14 (A 61661).—Basal-cell epithelioma of eyelid showing circumscribed and diffuse masses of cells.

12. In approximately 75 per cent. of all the cases treated at the clinic there was either one excision with the knife alone or one excision with the knife immediately followed by cautery.

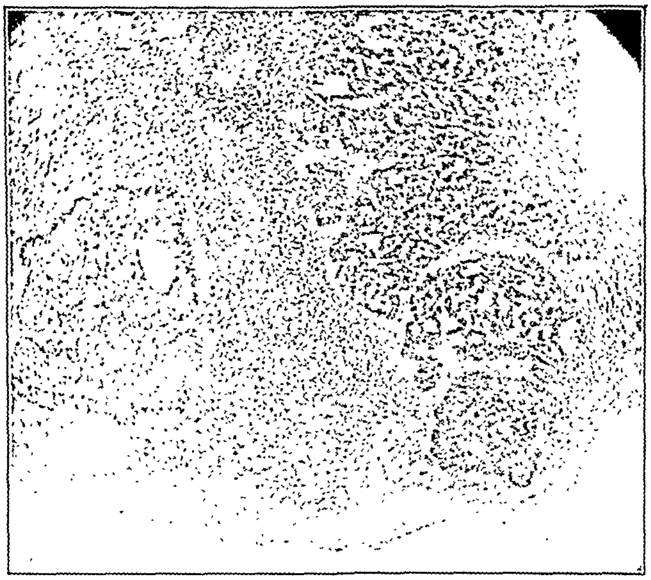
Fig. 16 (A 38151).—Basal-cell epithelioma of the outside of the nose, showing connection with epidermis; same as Figure 10.

13. Of the 54.1 per cent. of patients heard from, 75.86 per cent. are living, of whom 75.45 per cent. report a good result.

14. In the cases in which a good result was reported, 74.68 per cent. of the patients had either one excision with the knife alone or one excision with the knife immediately followed by cautery.

15. The patients treated with acids, carbon dioxid, etc., before entering the clinic did not get so good a result as those who had no previous treatment.

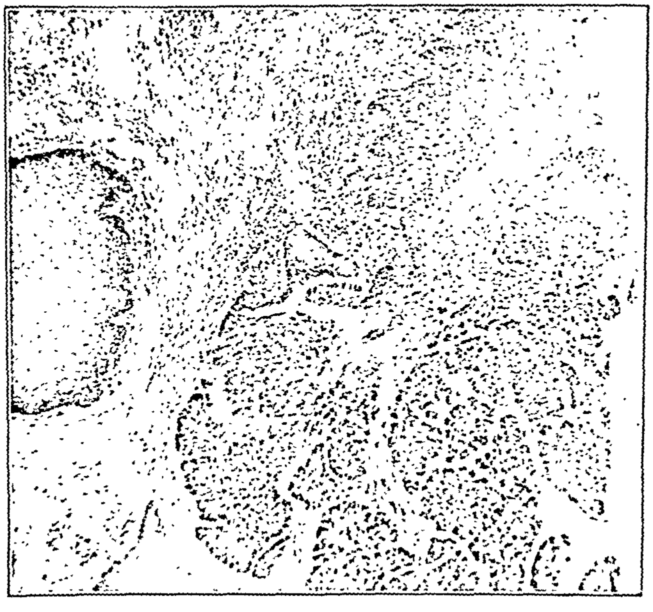
Fig. 17 (A 20310).—Gland type of basal-cell epithelioma of the outside of the nose, showing connection with epidermis.

16. The low [illegible]e of malignancy of the neoplasm is evidenced [illegible] long [illegible] lack of metastasis

in a single case in this series, response to proper surgical treatment, and by the fact that 75.45 per cent. of the patients reported living have been free from the disease on an average of six years, one and six-tenths months.

17. Of the patients reported dead, fewer than one third died from this disease.

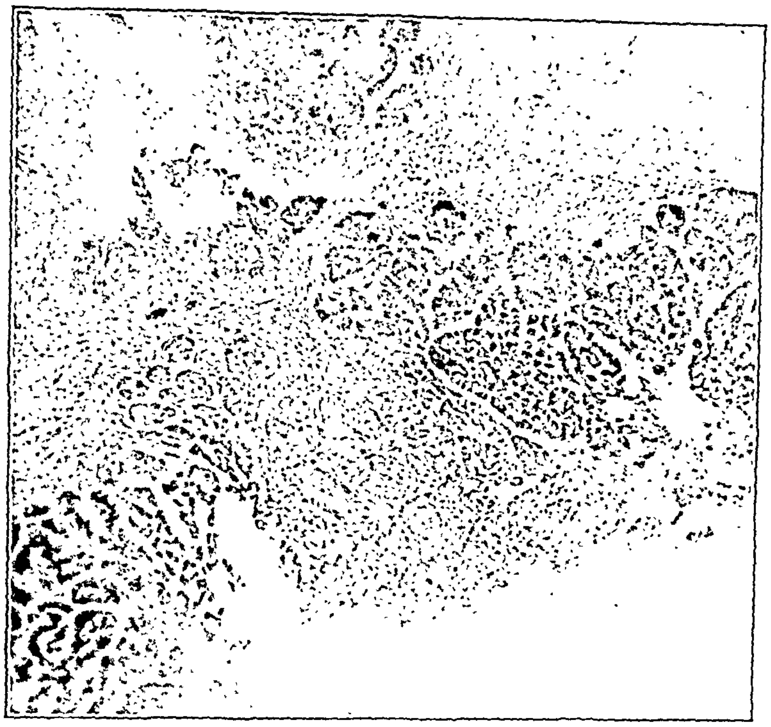

Fig. 18 (A 20310).—Gland type of basal cells intimately connected with squamous cells (typical metaplasia), adjacent to microscopic field of Figure 17.

18. Excessive exposure to sunlight as a cause of the neoplasm has not been borne out by the facts in our series of cases. It was noted that the hand, which is exposed to sunlight at least as much as any part of the body above the clavicles, did not show lesions.

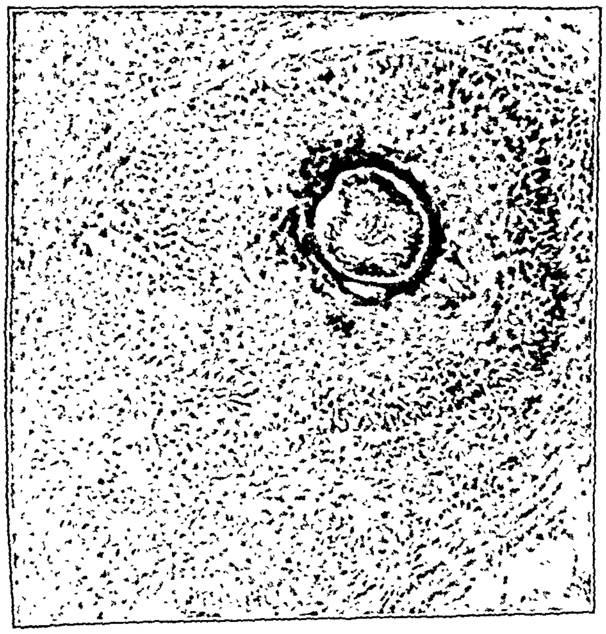

Fig. 19 (A 96196).—Basel-cell epithelioma of eyelid—originating from a hair follicle; same as Figure 7.

19. Practically all of the neoplasms in our series had their origin in the germinal layer of the epidermis of the skin. Only one was demonstrated to have originated from a hair follicle (Fig. 19).

Crime and the Feebleminded.—Psychopathy determines crime, and intelligence effects the nature of it.—Hickson.

TUBERCULOUS ANORECTAL FISTULAS

REPORT OF TWO CASES SHOWING SECONDARY LUNG INVOLVEMENT AND LATE CLINICAL EVIDENCE OF THEIR TRUE CHARACTER *

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AND

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NEW YORK

That abscess and fistula about the rectum are sometimes caused by infection with the tubercle bacillus is too well known to require more than passing mention, and, as the condition generally presents more or less definite clinical symptoms, its diagnosis does not offer any unusual difficulty, especially when there are corroborative signs in the lungs or other organs.

Briefly, a tuberculous fistula has an external opening that is patent, irregular and usually larger in size than that of the simple variety. It is more or less insensitive to probing and manipulation; discharges a thin, dirty gray material, seldom thick or creamy, and the skin surrounding it is bluish, undermined and unhealthy looking. The hair on the immediate neighboring parts is long, fine and silky; the buttocks are flattened, and the ischial tuberosities are prominent. While not all of these signs are present in every case, one or more of them are regularly in evidence very early in the disease, thus putting the surgeon on his guard in making his prognostic and therapeutic considerations.

Exceptionally we may meet some cases, however, in which they are doubtful, delayed or absent, in consequence of which it may not be recognized until late that we are dealing, not with a benign local infection, but with a serious general disease. In view of the obvious importance of these facts to all concerned, we desire to report two instances of this character that occurred in our experience during the past year:

REPORT OF CASES

Case 1.—M. S., a man, aged 49, a tailor, married, with negative family and previous history, developed one year before he came under observation a painful swelling about the anterior margin of the anus, which ruptured spontaneously and discharged a creamy liquid. Some weeks later he presented himself for treatment at the rectal clinic of the Post-Graduate Hospital, and was found to have a minute opening in the perineal skin, 2 cm. in front of the anus in the median line, which opened in the anterior wall of the anal canal, between the two sphincters. The tissues were sensitive to touch and probing, and the surrounding skin was pinkish and not undermined. There was no history of cough, hemoptysis, fever, gastro-intestinal disturbances or loss of weight, and examination detected no abnormal physical signs in the lungs or elsewhere. The case was therefore regarded as a simple, nonspecific anal fistula, and operation was performed under general anesthesia in the usual way. The patient was relieved of his pain and was lost sight of for a time. Later he again appeared at the clinic, some eight months after the onset of his symptoms, when his wound had grown considerably larger and looked rough, pitted, spongy and irregularly ulcerated, with its edges thickened and infiltrated. Tuberculosis was suspected and confirmed by laboratory examination of a piece of the excised tissue. The local condition improved, but the patient developed cough, dyspnea, and definite pulmonary signs.

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* From the Department of Rectal Diseases, Post-Graduate Medical School and Hospital.

CASE 2.—C. J. O'N., a man, aged 40, an executive, married, with negative family and previous history, was taken ill one year ago with pain and swelling about the rectum, accompanied by constipation and general symptoms lasting several days. A diagnosis of ischiorectal abscess and fistula was made, and he was treated surgically; the wound showed no disposition to heal, and he was referred to the junior author, who found the opening of a small tract on the skin, 5 cm. from the anal rim, and to the left of it, which opened internally on the corresponding rectal wall, and showed no evidence, either in its physical condition or in its clinical characters, of signs other than those one would expect to find in a simple, nonspecific fistula. Neither was there a history of cough, loss of weight, or any abnormal findings in the chest. The patient was treated surgically and his wound improved for a time, but nine months after the onset of his trouble it is still unhealed, has assumed an unhealthy look, its edges are blue and undetermined, and the patient has a cough, positive sputum, and infiltration of both lungs.

SUMMARY

A summary of these two cases shows that they both began with what appeared to be an ordinary abscess and fistula about the rectum, persisted for a considerable time without showing any signs that would lead one to suspect their true nature, and were followed by pulmonary involvement. Without attempting to generalize from two cases, we cannot shut our eyes to the warnings that they carry:

1. Clinical signs that would serve to distinguish between specific and nonspecific local lesions about the rectum are not dependable, because they may be late in making their appearance; consequently, laboratory examination should be resorted to as early as possible.
2. There may be secondary pulmonary involvement from a tuberculous focus about the rectum, in individuals who lack resistance.

616 Madison Avenue—310 West Eighty-Sixth Street.

Dr. Wu Ting Fang on the Urgent Need of Public Health Work in China.—In his address to the missionaries at Canton in September, 1918, as set forth in the *National Medical Journal of China*, Dr. Wu Ting Fang, China's veteran statesman, in the course of a discussion on the public health needs in that country, said: "The work of public sanitation, which must be kept under a system of public inspection, should be undertaken by government agencies. China begins to realize the enormous toll in human life exacted as the price of ignorance in these matters. The elementary principles of sanitation and hygiene are violated constantly in our crowded cities. Ignorance of proper preventive measures exposes annually millions of our people to dangerous epidemic diseases, many of which, in the light of modern medical science, are considered preventable. China must organize against disease by promoting a nationwide campaign of enlightenment. A noteworthy feature of China's progress is the establishment of the National Medical Association of China, a purely Chinese organization of nearly one hundred Chinese physicians educated in western medical science and pledged to 'expedite the spread of modern medical science in China and to arouse interest in public health and preventive medicine among the people.'"

FRACTURE AND ORTHOPEDIC TABLE

ESPECIALLY DESIGNED TO AID IN THE TREATMENT OF FRACTURES, BY EITHER THE OPEN OR THE CLOSED METHOD

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CHICAGO

Experience in surgery of bones and joints, particularly in the management of both the open and closed method of reducing fractures, led me to work out a mechanical device that would simplify this procedure.

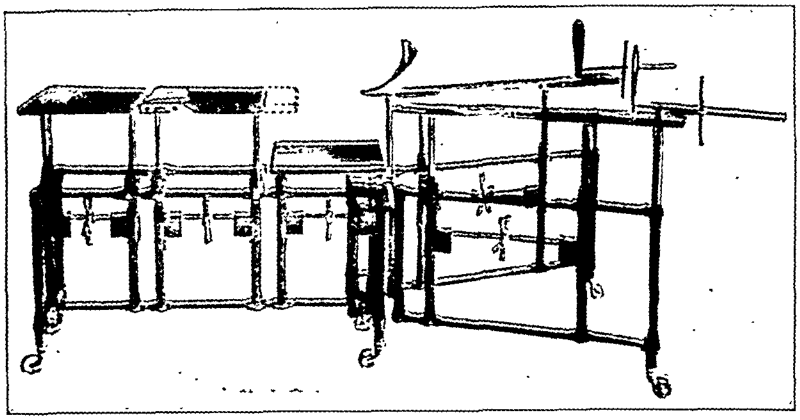
Fig. 1.—Table with lumbar segment lowered and the adjustable slide from the thoracic segment projected.

During the past year I presented my ideas on this subject to a hospital equipment manufacturer, and after submitting the drawings and a wooden model, the result of this effort was expressed in the fracture and orthopedic table herein described and illustrated.

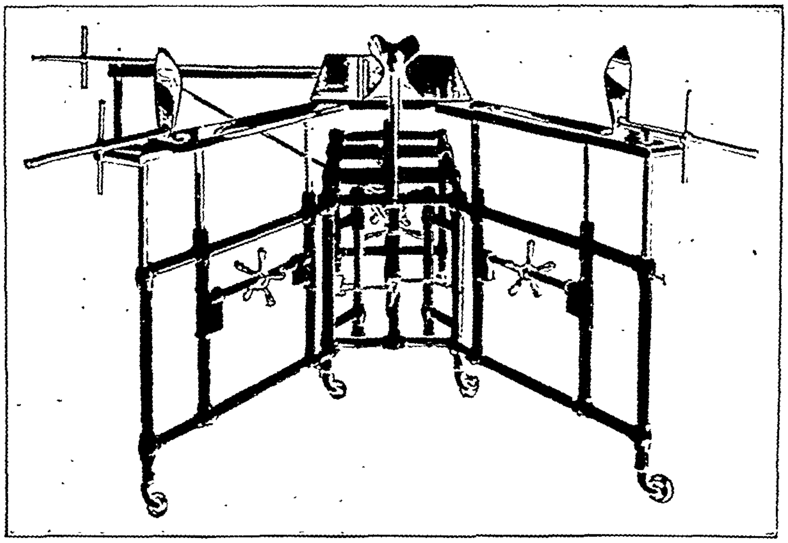
Fig. 2.—Table with leg segments divided.

War surgery has revealed lesions of so many parts of the anatomy that it was deemed advisable to construct an operating table that would permit of the maximum number of anatomic positions with the minimum degree of disturbance to the parts, in applying dressings and plaster-of-Paris casts, when the surgical procedure was completed.

The most difficult and distressing situation to be dealt with in bone and joint surgery comes in the treatment of these conditions in the lower extremities.

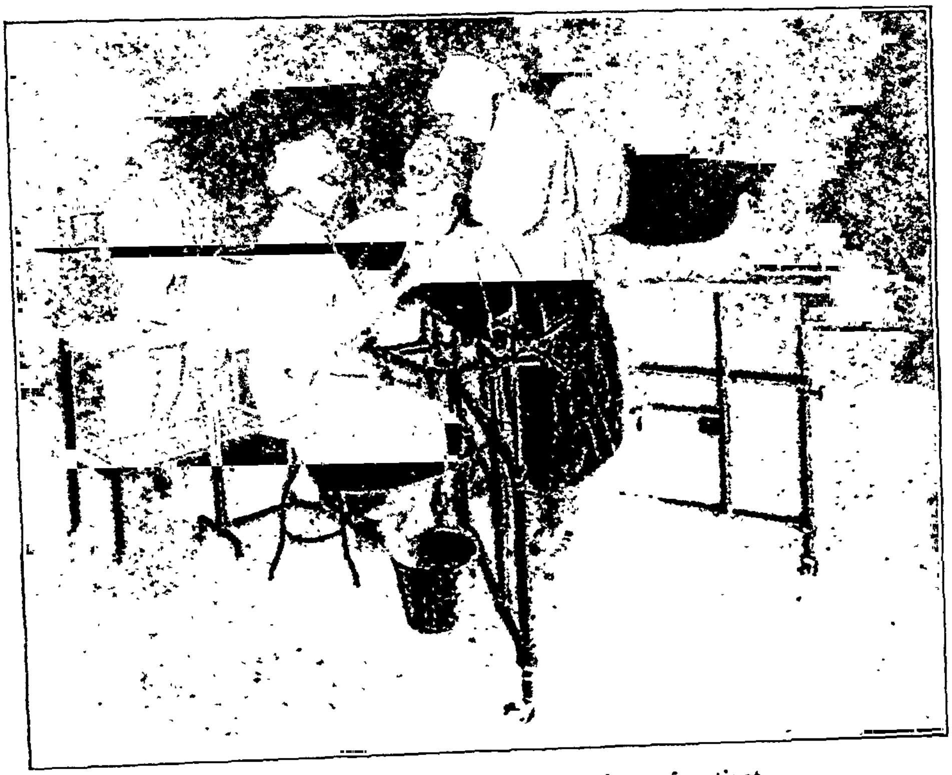

Fig. 3.—Assistant standing between legs of patient.

This led to the construction of an apparatus built on the principle of adjustable segments, which may be raised or lowered to any position desired by the surgeon.

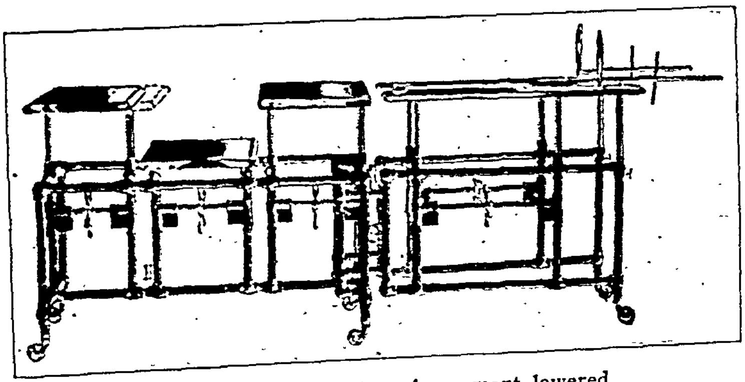

Fig. 4.—Table with thoracic segment lowered.

MECHANICAL CONSTRUCTION

The table is constructed on a segment or unit principle, which permits the units to be adjusted independently of one another.

By the lowering of one or more segments, the part to be operated on or dressed is not subjected to the same strain as would be caused if the same anatomic position were secured by elevation of the patient.

The same rigidity is secured with this construction, including the arm and leg segments, as is afforded by any single piece standard operating table, and at the same time the segments are adjusted with smoothness and ease. The segments, making up the table top, are raised and lowered by means of a spoked hand-wheel and steel shaft. These work in conjunction with a worm-gear and ratchet bar. The segment may be elevated or lowered as desired by a turn of the wheel.

This table presents an apparatus that renders it possible, by taking a position between the legs, for the operator to approach the inner side of the leg with the same ease as the outside.

Owing to the mechanical arrangement of the leg position of this table, the assistant is enabled to take a position between the legs where he can assist intelligently and with a relative degree of physical comfort, as shown in Figure 3.

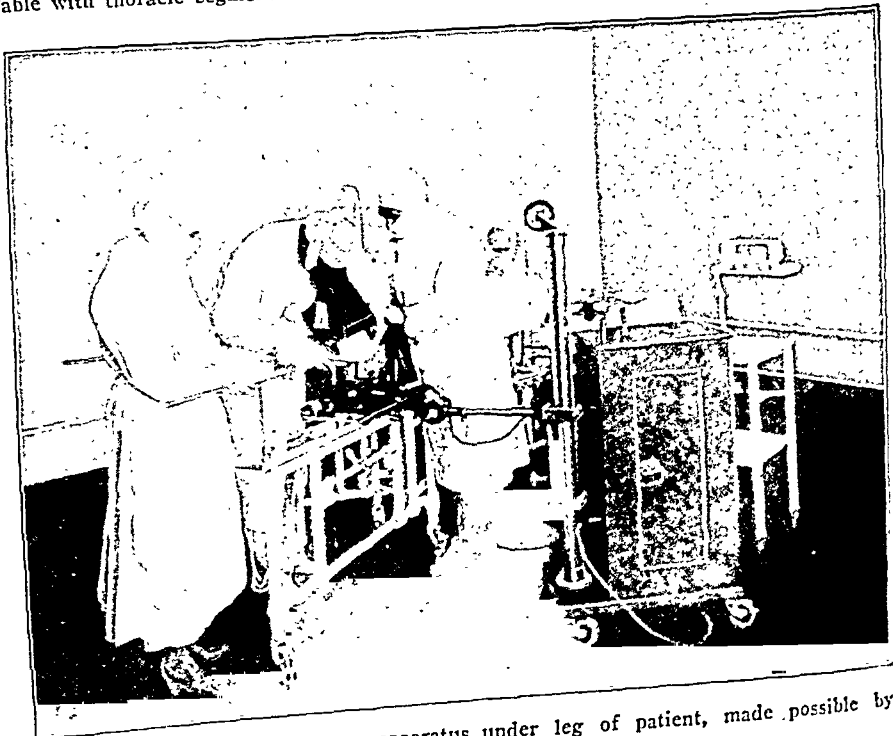

Fig. 5.—Portable roentgen-ray apparatus under leg of patient, made possible by dropping the right leg segment.

The leg segments, which can be lowered 9 inches, enable the surgeon to utilize a portable roentgen-ray apparatus in making a fluoroscopic examination of the bones and joints of the lower extremities. The same procedure may be carried out on the upper extremities by adjusting the arm segment. The parts may be presented in an admirable position for the application of surgical dressings or plaster-of-Paris casts. The bony segments may be held by this device with great precision after a fluoroscopic examination of a simple fracture or an open operation has enabled the surgeon properly to approximate the fractured ends of the bones.

By placing the patient on his abdomen, body casts may be applied by lowering the lumbar or thoracic segments. The latter positions will be found especially helpful in applying dressings in operations and in injuries to the spine.

ADVANTAGES

1. The table is constructed on the plan of segments so that the maximum number of anatomic positions may be presented for surgical operation or the application of dressings or plaster-of-Paris casts, with a minimum amount of disturbance during the procedure.
2. It is an apparatus for traction in reducing fractures either by the open or closed method. The completed table carries an adjustable slide for shortening or lengthening the lumbar segment to conform to the age or height of the patient.
3. The mechanical arrangement of the leg segments, which can be swung out at any angle, permits a division of the table so that the field of operation is as accessible on the inside of the leg as on the outside. This also permits what the designer claims is an advantage over any table now, to his knowledge, on the market, namely, the surgical assistant in hip and thigh operations, standing between the patient's legs, assists with more ease and skill than can be afforded in any other position.

PNEUMOCOCCUS TYPES IN RURAL DISTRICTS *

RUSSELL RICHARDSON, M.D.
PHILADELPHIA

Since Dochez and Gillespie[1] published their series of type determinations in cases of lobar pneumonia, much work of this character has been done. Almost all of the work, however, has been done in cases occurring in the cities, or, at least, in localities where contact would be a large factor.

In a series of cases covering four years at the Pennsylvania Hospital, Philadelphia, it appeared very noticeable that many of the Type IV cases presented a history of some exposure, which the patients considered to be the cause of their pneumonia. This was largely absent in the cases caused by the typical types. The latter, on the other hand, presented more frequently the history of a contact of some sort which would have given opportunity for inoculation with the infecting organism. The Type IV cases seemed to be largely due to a diminished resistance, while the typical types seemed to present a true contact infection.

DISTRIBUTION OF TYPES

Type	Number of Cases	Percentage	Average Percentage of Pennsylvania Hospital Cases
I	7	15.2	28.6
II	5	10.8	21.2
III	2	4.3	8.3
IV	32	69.6	41.8

Nichols,[2] working with pneumonia in the army, where, on account of the age and physical condition of the men, diminished resistance would not be expected, found 78 per cent. of all the cases caused by typical type organisms. The men in the army, living as they do in close association continually, afford the best possible opportunity for contact infection with the epidemic types.

It seemed that a study of the distribution of the types of pneumococci found in cases of pneumonia occurring in the country would be of interest. Here is lacking the personal contact with large numbers of people which is so distinctive a feature of life in a city. It was expected, for this reason, that the cases of pneumonia from the country might show a predominance of Type IV organisms.

The collection of sputum was accomplished by sending to a number of physicians, living in small towns and cities, containers with return label. The locations of the physicians was such that while the cases represented the typical patients from the country, yet they were not so far removed from the city that the sputum could not always be received at the laboratory in less than twenty-four hours by mail. In all, sixty-one specimens of sputum were received, and of these type determinations were made in forty-six. Some of those in which no pneumococci were found were not satisfactory specimens, and in some cases the original diagnosis of pneumonia was not confirmed by the physician's own further examination. In all of the forty-six cases there was apparently no question as to the diagnosis of lobar pneumonia.

The method for type determination was that used at the Hospital of the Rockefeller Institute. A few sputums which were apparently not properly collected and which appeared to be merely saliva from the mouth were disregarded.

The accompanying table shows the distribution of types.

It will be noticed here how much higher is the percentage of Type IV cases in the country than the average for four years in the city. In four of the Type I and in two of the Type II cases the patients had such an intimate contact with the city shortly before their pneumonia as to suggest the possibility of their having acquired the organisms there. Apparently without close contact between persons and the consequent chance to spread the infection, the typical types decrease until they cause only a small proportion of the cases of pneumonia.

320 South Sixteenth Street.

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* From the Ayer Laboratory of the Pennsylvania Hospital.

[1] Dochez, A. R., and Gillespie, L. J.: A Biologic Classification of Pneumococci by Means of Immunity Reactions, J. A. M. A. **61**: 727 (Sept. 6) 1913.

[2] Mil. Surgeon **41**: 149 (Aug.) 1917.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

NEOARSPHENAMINE (See New and Nonofficial Remedies, 1919, p. 41).

Neoarsaminol.—A brand of neoarsphenamine.

Manufactured by the Takamine Laboratory, Inc., New York, under U. S. patent reissue No. 13,849 (Dec. 15, 1914; expires 1931) by license of the U. S. Federal Trade Commission.

Neoarsaminol, 0.15 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.15 Gm.

Neoarsaminol, 0.3 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.3 Gm.

Neoarsaminol, 0.45 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.45 Gm.

Neoarsaminol, 0.6 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.6 Gm.

Neoarsaminol, 0.75 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.75 Gm.

Neoarsaminol, 0.9 Gm. Tubes.—Each hermetically sealed tube contains neoarsaminol 0.9 Gm.

MIXED BACTERIAL VACCINES (See New and Nonofficial Remedies, 1919, p. 296).

Swan-Myers Company, Indianapolis.

Swan's Mixed Acne Bacterin (No. 41).—Marketed in 6-Cc. vials, each cubic centimeter containing 25 million killed acne bacilli and 500 million killed *Staphylococcus pyogenes-albus.*

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1919, p. 287).

Swan-Myers Company, Indianapolis.

Swan's Pertussis Bacterin (No. 38) (Prophylactic).—Marketed in packages of three 1-Cc. vials, containing respectively 50, 100 and 200 million killed pertussis bacilli.

STAPHYLOCOCCUS VACCINES (See New and Nonofficial Remedies, 1919, p. 289).

Swan-Myers Company, Indianapolis.

Swan's Mixed Furunculosis Bacterin (No. 39).—Marketed in 6-Cc. vials, each cubic centimeter containing 500 million killed *Staphylococcus pyogenes-aureus* and 500 million killed *Staphylococcus pyogenes-albus.*

TYPHOID VACCINE (See New and Nonofficial Remedies, 1919, p. 292).

Swan-Myers Company, Indianapolis.

Swan's Typhoid-Paratyphoid Bacterin (No. 42) (Prophylactic).—Marketed in packages of three 1-Cc. vials, one vial containing 500 million killed typhoid bacilli and 250 million each of paratyphoid bacilli A and B, while the other two vials each contain 1 billion killed typhoid bacilli and 500 million each of paratyphoid bacilli A and B.

THE JOURNAL OF THE
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SATURDAY, MARCH 22, 1919

THE SYNTHETIC POWERS OF THE MAMMARY GLAND

The mammary gland has long been believed to be the seat of important synthetic activities. The casein, the sugar and to a lesser degree some of the fats of milk are different from any protein, carbohydrate or fat found elsewhere in the body. They have a specific character long recognized. What are the limits of the synthetic power of cells which can produce such distinct and specialized products? Can it produce them entirely de novo as the growing plant builds the most complex organic derivatives from very simple compounds, or is the synthetic capacity of the gland limited to a less profound sort of rearrangement of preformed fragments? It is well known in the case of the nutrition of growth that certain amino-acids are indispensable for the synthesis of tissue proteins. The capacity of the body to produce glycocoll seems to be almost unlimited. But without tryptophan or lysin new tissue cannot be formed; and unless they are supplied in some potential form in the diet, further synthetic progress is limited. Such is the evidence that the growing animal cannot manufacture all amino-acids with equal facility, if at all.

Is the highly specialized mammary gland more proficient than other groups of cells in the body? On the answer to this question depends the decision as to whether special dietary consideration must be given to the lactating individual. The problem has been excellently summarized by a group of investigators at the University of Wisconsin.[1] They remark:

> The mammary gland synthesizes a special sugar, as, for example lactose, but it probably starts with *d*-glucose, which as a precursor offers no unsurmountable difficulties. It makes a variety of fatty acids of special chemical character, but here again, whether originating from carbohydrates or preexisting fats, the chemical steps, at least theoretically, are capable of projecture. This gland makes a special protein, casein, and presumably from amino-acid fragments in the blood. It is also presumed that it makes casein, not through synthesis of amino-acids de novo, but by an orderly assembling, in quantitative relations, of those amino-acids found in the casein molecule. Should an amino-acid, occurring in casein and essential for growth, be absent in the diet, would there be a serious interference in casein building? Or does this gland retain special synthetic powers not shown by muscle cells, and in the absence of a specific amino-acid make it from other nitrogenous fragments?

The answer, in respect to the need of one amino-acid, lysin, the importance of which has been frequently emphasized of late, is furnished by the newest Wisconsin experiments. It is possible to prepare a diet free from proteins yielding lysin, yet adequate in every other respect. On such a ration, normal maintenance seems to be impossible; and judging by the fate of the young which suckle a mother dependent on a lysin-free diet, it appears very probable that the mammary gland cannot synthesize the missing amino-acid. For a time, milk production may proceed at the expense of lysin furnished by the breakdown of less essential tissues; but there is no evidence of reconstruction. As Hart, Nelson and Pitz[1] conclude, the evidence submitted supports the view that, so far as the proteins are concerned, milk secretion, like growth, is ultimately dependent on the quality and quantity of amino-acids ingested with the food. The lesson from this is clear. The importance of a properly selected diet, insuring an adequate supply of superior proteins, cannot be overlooked in the management of the lactating mother.

ARE ACID-FORMING DIETS DANGEROUS?

The remarkably effective way in which neutrality is regulated in the living organism has attracted attention from many standpoints in recent years. The regulation appears to be essentially physicochemical in nature, involving such a reaction between acids and bases that the hydrogen-ion concentration of the fluids bathing the tissues is practically constant. When it is recalled that our food intake, on the one hand, furnishes a variable mixture of acid and basic substances, while, on the other hand, the processes of metabolism may give rise to such acids as carbonic, lactic, sulphuric and phosphoric, as well as the base ammonia in addition to the potentially available supply of fixed alkalis, one can appreciate the careful adjustments of a chemical sort that must be made to secure a tissue medium of approximately constant reaction out of the variables that play on it. The acid components almost always preponderate; and accordingly there are several physiologic devices that assist in the removal of this excess. Carbonic acid is eliminated through the lungs, while fixed acids are excreted by the kidneys and sometimes, in lesser degree, by the bowel. Stores of alkali seem to be liberated automatically when they are needed to offset a surplus of acid that cannot be rendered inert in other ways.

Everyday experience shows that the normal fluctuating production of acid compounds—the natural end-products of an oxidative metabolism—are apparently taken care of with readiness by the ordinary processes of elimination and, in lesser degree, neutralization with ammonia. Clinical observations have established, furthermore, that when there is a defect in the eliminating mechanism, such as may appear in certain diseases of the kidneys, the neutrality regulation may be interfered with to a degree that upsets the usual equilibrium and gives rise to pathologic manifestations. To indicate this condition the much abused expression acidosis has sometimes been employed. The "alkali reserve" of the blood may be decreased.

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[1] Hart, E. B.; Nelson, V. E., and Pitz, W.: Synthetic Capacity of the Mammary Gland, I, Can This Gland Synthetize Lysin? J. Biol. Chem. **36**: 291, 1918.

Lately the question as to whether the normal regulatory devices of the organism are adequate to meet the wide variations in reaction that are liable to be presented to it has been considerably debated. Not until the present decade has it been appreciated how extensively the preponderance of base-forming or acid-forming elements, respectively, in the diet may modify the disposal of acids from the body. Foods with a preponderance of acid-forming elements can increase the acidity and ammonia of the urine, and incidentally decrease its solvent power for uric acid. A reverse effect is brought about by liberal ingestion of base-forming foods. The outcome is not a question simply of the use of foods of animal or vegetable origin, respectively. Representatives of both sorts of reaction potentialities can easily be secured from either animal or plant sources. One may well ask whether more attention should not be paid to this intricate question of the influence of definite foods on the regulation of neutrality, since it is possible to modify it by diet quite as well as by the therapeutically familiar sodium bicarbonate. Sherman,[1] who has contributed important observations in this field from his laboratory at Columbia University, New York, has remarked that the benefit to health which so generally results from a free use of milk, vegetables and fruits in the diet may be attributable in part to the fact that these foods yield alkaline residues when oxidized in the body; but this point should not be too greatly emphasized, for there are several other respects in which the eating of liberal amounts of milk, vegetables and fruits is certainly beneficial, notably in supplying calcium, iron and vitamins, and in improving the intestinal conditions.

Clinical pathology has shown that the possibility of inadequate regulation may become a reality in disease. But are there unsuspected dangers of this sort associated with the nutrition of the healthy? Is it advisable to provide more carefully for the balancing of the potential acid and base of the ration? To cite a specific detrimental possibility, will a prolonged excess of acid-forming elements which might exist in natural foods exercise a deleterious effect on protein storage, such as growth and recuperation represent, by deflecting nitrogenous components to the production of ammonia for neutralization? Or will it drain needed fixed bases like calcium and the alkalis from the various tissues, to the detriment of the organism?

The experimental evidence respecting the protective devices of the body has long established the marked tolerance that exists for acid.[2] An exceedingly severe test has recently been contributed by Lamb and Evvard[3] of the Iowa Agricultural Experiment Station to the literature of the acid-base balance of the organism. They fed large and equivalent quantities of acetic, lactic and sulphuric acids, respectively, to growing swine. Those that received the inorganic acid which could not be oxidized further in the organism grew practically as well as the control lot. It seems established anew, therefore, that if the other elements in a natural ration are satisfactory, it is not necessary to balance the acid and basic mineral elements for growing swine. Presumably nutritional failures are often ascribed to excess acidity when other causes are not wholly excluded.

It is interesting to note how the large intake of sulphuric acid, amounting to 300 c.c. of normal acid in addition to that liberated through the body's metabolic processes, was disposed of. As much as three quarters of it was neutralized by means of ammonia. Extra urinary acidity accounted for another 5 or 10 per cent. The experiments also serve to allay the fears of those who suspect that an acid metabolism may rob the body of its calcium. Givens and Mendel[4] have demonstrated that neither acid nor alkali appears to exert any marked effect on calcium storage. The studies of Lamb and Evvard further demonstrated on a different species that mineral acid in large doses failed to cause a significant loss of calcium or interfere with the storage of protein.

The foregoing findings were ascertained by a study of the balance of the elements between the intake and output. Whether, under less normal conditions of diet, body damage may not result to tissues from prolonged "acidosis" in the course of time cannot yet be positively foretold. In a recent study of rabbits, Goto[5] examined the muscles and bones of animals that received a daily dosage of mineral acid. The results were not so conclusive as might be desired; yet the author believes them to indicate that next to the bicarbonates of the body fluids, the first major reserves of alkali drawn on in acid intoxication of rabbits are the alkali phosphates, particularly potassium phosphate, of the muscles, and the calcium carbonate of the bones. The bones do not lose calcium phosphate in appreciable amounts. What happens in clinical acidosis cannot yet be foretold.

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[1] Sherman, H. C.: The Chemistry of Food and Nutrition, New York, 1918, p. 282.

[2] Henderson, L. J.: J. Biol. Chem. **9**: 403, 1911; Science **37**: 389, 1913; **46**: 73, 1917. McCollum, E. V.: Am. J. Physiol. **25**: 127, 1909-1910. McCollum, E. V., and Hoaglund, D. R.: J. Biol. Chem. **16**: 299, 1913-1914. Steenbock, H.; Nelson, V. E., and Hart, E. B.: J. Biol. Chem. **19**: 399, 1914.

[3] Lamb, A. R., and Evvard, J. M.: The Acid-Base Balance in Animal Nutrition, I, The Effect of Certain Organic and Mineral Acids on the Growth, Well Being and Reproduction of Swine, J. Biol. Chem. **37**: 317, 1919; II, Metabolism Studies on the Effect of Certain Organic and Mineral Acids on Swine, ibid., p. 329.

[4] Givens, M. H., and Mendel, L. B.: J. Biol. Chem. **31**: 421, 1917. Givens, M. H.: Ibid. **35**: 241, 1918.

[5] Goto, K.: Mineral Metabolism in Experimental Acidosis, J. Biol. Chem. **36**: 355, 1918.

EXPERIMENTAL POLYNEURITIS

It would be easy to give convincing illustrations of the enormous advantage that has accrued to the pursuit of the medical sciences from the ability to reproduce individual types of disease experimentally in animals. In the case of the infections, the nature of the etiologic agents has been established thereby. Rational therapeutics has received great help from the possibility of studying treatment in experimentally established disease. The so-called deficiency diseases afford a peculiarly characteristic illustration of the almost indispensable advantage of the ability to reproduce them at will. Birds, rats, mice, guinea-pigs and monkeys have shown typical and diverse susceptibilities to the lack of certain food factors in the diet. The cause, cure and prevention of such confusing maladies as beriberi, scurvy, pellagra and rickets in man seem destined to be more effectively understood as the result of the laboratory studies of the past decade than through the cruder, though by no means valueless, empiric observations of the preceding century.

Several of the more prominent human deficiency diseases, like those of infectious origin, seem to have found an analogue in symptoms that can be produced in certain species of animals under defined conditions. Just as not all of the animal forms are equally susceptible to tuberculosis or typhoid fever, for example, so the study of experimental scurvy has heretofore been confined to the guinea-pig and latterly also to the monkey, whereas beriberi has found its best experimental representation in the pigeon or the chicken. The experimental avian polyneuritis that can be induced by an exclusive diet of polished rice has unquestionably contributed much to the understanding of the etiology of beriberi and its prevention.

It is a further step in the direction of progress to be able to induce a comparable polyneuritis through selected deficient diets in the higher forms represented by the mammals. Thanks to the systematic efforts of Voegtlin and Lake[1] in the Hygienic Laboratory of the United States Public Health Service, a method has been evolved. Polyneuritis has been produced in cats and dogs as the result of an exclusive diet of lean beef which was heated for three hours at 120 C. in the presence of alkali (sodium carbonate). Proof of this statement is furnished by the symptomatology, treatment and pathology of the disease noted, which are essentially those characteristic of beriberi. The symptoms observed in these animals were diminution of appetite, constipation, loss of body weight, weakness and sometimes drowsiness, followed by paralytic symptoms, tonic convulsions, spasticity of certain groups of muscles, and disturbances of the circulation and respiration. The oral administration of active preparations of the antineuritic substance of yeast to paralyzed animals is followed promptly by the disappearance of the symptoms, and the continued administration of these preparations prevents the recurrence of the disease. In this respect there is an analogy, if not an identity, between the effects of yeast in preventing or curing polyneuritis and its favorable functioning as a "promoter of nutrition" by furnishing the indispensable water-soluble vitamin.[2]

In the case of these meat-fed animals, the inadequacy of the polyneuritis-producing diet is not attributable to a lack of the fat-soluble vitamin, such as is found in butter and egg yolk, or to a poor quality of proteins in the diet. The primary and principal fault must be associated with the destruction of antineuritic vitamin. Incidentally, it may be recalled that Osborne and Mendel have demonstrated that ordinary flesh (skeletal muscle) is at best poor in water-soluble vitamin.[3]

Fortunately, it appears from the government investigations that although high temperatures and alkaline reaction are a damaging combination for beef, it can be heated for three hours at 120 C. (248 F.) without completely losing its antineuritic properties. Voegtlin and Lake assume that the acid products, like lactic acid, present in flesh are responsible for the normal heat resistance of the antineuritic substance. Heating a food with alkali under pressure for considerable periods is rather drastic treatment from the culinary standpoint. Daniels and McClurg[4] have recently asserted, on the basis of their investigations at the University of Wisconsin, that heating even in alkaline reaction is by no means as destructive of the antineuritic properties of foods as has been alleged, particularly by McCollum. From a considerable experimental experience they regard it improbable that in the commercial canning of foods the vitamin is destroyed to such an extent that too little will be included in the diet when the usual amount of canned food is eaten. Even if there should be a considerable increase in the amount of canned food consumed, they believe that there will still be present enough of the antineuritic vitamin to meet the physiologic requirements, provided the diet is not materially changed in other respects. In the preparation of beef, in any event, for human consumption this food is rarely exposed throughout to a temperature exceeding 100 C. (212 F.). This procedure would seem to be within the danger limits of damage, so far as the antineuritic properties are concerned.

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[1] Voegtlin, C., and Lake, G. C.: Experimental Mammalian Polyneuritis Produced by a Deficient Diet, Pub. Health Rep. **34**: 3, 1919; Am. J. Physiol. **47**: 558, 1919.

[2] Osborne, T. B., and Mendel, L. B.: The Rôle of Vitamins in the Diet, J. Biol. Chem. **31**: 149, 1917; Yeast in a New Rôle, editorial, J. A. M. A. **66**: 1390 (April 29) 1916; Yeast, ibid. **69**: 826 (Sept. 8) 1917.

[3] Osborne, T. B., and Mendel, L. B.: Nutritive Factors in Animal Tissues, I. J. Biol. Chem. **32**: 309, 1917.

[4] Daniels, Amy L., and McClurg, Nelle I.: Influence of High Temperatures and Dilute Alkalis on the Antineuritic Properties of Foods, J. Biol. Chem. **37**: 201, 1919.

THE TISSUE FACTOR IN SHOCK

Few words now current in the medical sciences are likely to awaken so much confusion of ideas and uncertainty of judgment as is the expression "shock." It seems to represent a clinical entity of serious importance, in the interpretation of which all except the most critical students have run amuck. One after another the hypotheses to explain shock and the consequent suggestions for treating it have been martialed with a confidence seemingly born of exact knowledge —only to be shattered by conflicting evidence or before the approach of some more convincing theory. Meanwhile, keenly desirous of finding some solution to the serious and ever present problems of the clinical forms of shock, physicians have hastily grasped the current suggestions with eagerness that has been the forerunner of reluctance to abandon each pet theory. There is much sanity, therefore, in an appeal recently made by Dr. S. J. Meltzer[1] urging physiologists, when they undertake to apply their scientifically trained minds to problems of the practice of medicine, to adhere firmly to the careful, critical methods that they are in the habit of employing in their physiologic researches. This he urges, although recognizing that the actual yield to medicine as a consequence may be slow and, perhaps, even small. He also reminded clinical men to imbibe well-established new physiologic facts, but in the application of these facts to stick closely to well-established, careful clinical methods.

Profiting by such warnings, we shall not venture any offhand pronouncements in explanation of shock. But as progress can be initiated only by new observations and renewed discussion, attention is called to an aspect of the question that has only recently begun to attain recognition, namely, the nutritional disturbances that may be an underlying factor. Shock has long been looked on essentially as a circulatory upset. The "primary" shock often comes about so promptly after an injury as to be explained quite naturally as a result of nervous action. It is well known that a condition resembling shock in greater or lesser degree can be induced experimentally by numerous procedures, including mechanical injuries, hemorrhage, overanesthesia, or interference with the blood supply to a part. The more recent point of view has been well summarized by Gesell.[2]

In his research, Gesell considers shock in a very general way as a combined circulatory and nutritional disturbance resulting from a number of forms of tissue abuse which, if left to run their course, may lead to death. Even though these forms of tissue abuse, the initiating causes, may be removed, the fatal issue is not necessarily avoided. Gesell adds that some changes apparently have taken place as a result of the tissue abuse which sustain the condition. The factors in shock are therefore divided into initiating factors and sustaining factors. The initiating factors, says Gesell, ultimately lead to changes in the tissues which have their influence on the "sum of the processes concerned in maintenance and repair" of living tissue. There are cellular damage, increased permeability of cells, transudation, eventual decrease in blood volume, slowing of the blood stream, etc. These represent sustaining factors, some of which are not readily removed.

The analysis of this condition, if in any degree correct, must serve to direct attention away from some of the factors, such as mean blood pressure, that have hitherto been too exclusively made the center of consideration. It is scarcely necessary to recall that the modes of combating surgical shock by injecting drugs intended to raise blood pressure have not been found adequate. Despite an increased blood pressure, the "nutrient flow" to the tissues may be entirely unsatisfactory. They may become damaged. The injury may be chemical in origin and may produce transudation of plasma and stasis of blood. As Gesell pictures this aspect of the problem, the decreased blood volume, eliciting a vascular constriction, reduces the flow of blood to a level below that essential for normal nutrition and far below that essential for deteriorated tissues. The condition is thus sustained by the disturbed nutrition and by the consequent inability on the part of the animal to recover the normal permeability of the vessels and therefore restore the normal blood volume that is so essential for an adequate flow of blood. Since the circulatory and nutritional disturbances are so closely interdependent, one disturbance may become as important as the other.

If the diverse schemes for transfusion, including the use of blood and of alkaline and viscid solutions, have not succeeded in meeting the needs of the damaged tissues, it becomes a problem of the future to recognize the impending circulatory changes before they can do serious damage to the tissues by depriving the latter of proper nutrition. It will further be necessary to devise additional methods to provide damaged tissues with a suitable circulating medium and to combat the abnormal permeability of some of the peripheral vessels. In other words, chemical and nutritional factors as well as nervous and circulatory forces must be taken into consideration in making an adequate study of shock.

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[1] Meltzer, S. J.: Some Theories of Shock, Pennsylvania M. J. **22**: 129, 1918.

[2] Gesell, R.: Studies on the Submaxillary Gland, IV, A Comparison of the Effects of Hemorrhage and of Tissue-Abuse in Relation to Secondary Shock, Am. J. Physiol. **47**: 468, 1919.

Current Comment

MODERN HEALTH ORGANIZATION IN NEW MEXICO

Congratulations to New Mexico, the last one of our states to establish some form of organized state public health machinery. In his report on state public health work, made five years ago, Dr. Chapin said of New Mexico, "It is unfortunate that a state with a population which now probably numbers nearly half a million should do nothing whatever for public health. It is the only state of which this can be said." Happily, this is no longer true. March 14, the bill proposed by the New Mexico Public Health Association passed the senate unanimously. It had already been adopted by the house. The bill provides for a board of three members, one of whom may be a physician. The health commissioner must be a "person having experience and special training in sanitary science and public health administration." His salary is fixed at $3,000. A long list of functions of the state board are enumerated in the measure, among them being power to investigate and control diseases; inspect public buildings, private premises and industries; establish, maintain and enforce quarantine; collect, compile and tabulate reports of marriages, births, deaths and morbidity; disseminate public health information; prevent infant mortality; promote child hygiene; regulate the sanitation and safety for consumption of milk, meats and other foods, and supervise the work of local health authorities. An appropriation of $20,000 is made for the first year. As the last state in the Union to adopt modern public health legislation, New Mexico has been in a position to profit by the experience and mistakes of her sister states. The incorporation in a single public health law of provisions for vital statistics, infant mortality, child hygiene, food control, and supervision of local public health authorities is to be highly commended. The amount appropriated is, of course, too small for a completely organized and equipped state health department; but if the funds available are wisely expended, the people of New Mexico will soon realize that money spent for public health is one of the best investments that the people of the state can make, and will support the new board by larger appropriations. The organization and development of state health activities in New Mexico will be watched with great interest.

NEEDS OF MEDICAL EDUCATION AS REVEALED BY THE WAR

The world war has called attention to special needs in every line of human endeavor. No previous war had so involved the entire world or so hazarded the very existence of practically every civilized government. In no previous war was such extensive use made of those who had reached the highest attainments of human skill and ingenuity. The urgency and extent of this demand naturally drew attention to the scarcity of those who were qualified to render service along highly technical or specialized lines. So in medicine there was an unprecedented demand for physicians of exceptional qualifications and skill in the various specialties, such as pathologists, bacteriologists, psychiatrists, and, of course, expert surgeons along special lines, as, for instance, brain surgery. Here, likewise, the urgency of the demand has forcibly revealed the fact that the supply of physicians having such skill is comparatively limited. This revelation, however, does not call for a violent condemnation of medical education of the past, but does lay special emphasis on the possibilities and aims of medical education in the future. As a matter of fact, the improvements of the last fifteen years have been directly in line with these needs and are, therefore, a matter of congratulation. The United States was never so well supplied with physicians who were as thoroughly trained or as skilled in the specialties, as at the time it entered the world war. Meanwhile, the war has rendered a great service in revealing the possibilities and benefits that will result from higher attainments in medicine. This shows the necessity of continuing the campaign for improvements, not only in undergraduate but also in graduate medical education. If the highest attainments are of such vital importance in great national crises, how much greater will be the service to the public whether there be peace or war.

THE VIRTUES OF OMISSION

In a recent issue of a publication devoted to advertisers, the Cleveland *Plain Dealer* carried a full-page advertisement to give publicity to the fact that "on seventeen important lines of business" it had carried more advertising during 1918 than any other paper in the same city. The seventeen different kinds of business were named and tabulated, ranging from Autos, Books and Stationery, through Electrical and Financial, Railroads and Steamships, to Schools and Colleges. Not a word in the advertisement was said about medical advertising. Possibly the *Plain Dealer* does not carry any, although it is morally certain that it could get all it wanted, for every reputable newspaper is offered more "patent medicine" advertising than it will accept. The significant facts are that either the *Plain Dealer* doesn't cater to medical advertising, or if it does, it makes no effort to give publicity to the amount it gets. That no reputable newspaper ever brags about its desirability as an advertising medium for medical "copy" speaks volumes for the ethical and moral status of the "patent medicine" business.

Winter Hibernation of Mosquito Larvae.—Asst. Epidemiologist T. H. D. Griffiths of the United States Public Health Service in *Public Health Reports,* Nov. 15, 1918, gives the results of his search for mosquito larvae after the advent of cold weather and summarizes the results as follows: Anopheles (*crucians* and *punctipennis,* at least) pass the winter in the larval stage. This is true for northern Louisiana (for *crucians*) during a severe winter for that section. Evidence, though less conclusive, shows that *A. punctipennis,* at least in the larval stage, withstands a severe eastern Virginia winter. Apparently pupation does not occur at low temperature, or until ordinary room temperature obtains. In selected places considerable numbers of anopheles larvae pass the winter as such.

Association News

HOTEL HEADQUARTERS AT ATLANTIC CITY

The Local Committee on Arrangements announces the following as the hotel headquarters for the coming annual session of the American Medical Association to be held in Atlantic City, June 9-13:

General Headquarters	Marlborough-Blenheim
Practice of Medicine	Dennis
Surgery, General and Abdominal	Chalfonte-Haddon Hall
Obstetrics, Gynecology and Abdominal Surgery	Breakers
Ophthalmology	Traymore
Laryngology, Otology and Rhinology	Chelsea
Diseases of Children	Seaside
Pharmacology and Therapeutics	Arlington
Pathology and Physiology	Royal Palace
Stomatology	Craig Hall
Nervous and Mental Diseases	Brighton
Dermatology	Blackstone
Preventive Medicine and Public Health	Shelburne
Genito-Urinary Diseases	Alamac
Orthopedic Surgery	St. Charles
Gastro-Enterology and Proctology	Bothwell

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 14, the Medical Corps contained 20,679 officers, a decrease of 153 from the previous week. The Medical Reserve Corps contained 1,029 officers. The total number of medical officers discharged since the beginning of the war is 12,742.

Medical Veterans of the World War

Forms for applying for membership in the Medical Veterans of the World War, as well as copies of the constitution of that organization, may be obtained from the secretary, Col. F. F. Russell, M. C., U. S. Army, Army Medical School, Washington, D. C. Copies also may be obtained from the headquarters of the American Medical Association; send stamped addressed envelope.

Military Cross Awards

The following medical officers have been awarded the military cross for bravery and distinguished service in action: Irving F. Barnett, Captain, M. C., U. S. Army, Chicago, and Earl R. Chamness, Chicago, Griffith A. Demay, Indianola, Neb., James W. Aldridge, Covington, Ind., William H. Caine, Willoughby, Ohio, Oscar H. Peterson, Lamoni, Iowa, Paul J. Preston, Minneapolis, and George H. Reddick, Wabeno, Wis., Lieutenants, M. C., U .S. Army.

Personal

The President, before his departure for France, March 5, made recess appointments of Walter D. McCaw, Col., M. C., U. S. Army, and Robert E. Noble, Lieut.-Col., M. C., U. S. Army (temporary Major-Gen., M. C., U. S. Army), to be permanent brigadier-generals of that branch to fill the two vacancies created by the act of Congress of July 9, 1918.——Officers of the hospital division of the Surgeon-General's Office tendered a farewell dinner, March 6, to the chief of that division, Winford H. Smith, Col., M. C., U. S. Army, Baltimore, who was retired as chief of the division, and Louis B. Baldwin, Lieut.-Col., M. C., U. S. Army, Minneapolis, in charge of administration of hospitals in the division.——By conference agreement, promotion in the retired list from colonel to brigadier-general has been provided for L. Mervin Maus, Col., M. C., U. S. Army. The Senate had previously passed a separate bill to authorize the rank of brigadier-general for Colonel Maus.

Wounded Slightly

The following officers are reported in the Official Bulletin to have been slightly wounded: Harrison J. McGhee, Major, M. C., U. S. Army, Morrisdale. Pa.; William Gramley, Franklin, Pa., Norman Oscar Nelson, Baltimore, and Leslie C. Russell, Newark, N. J., Captains, M. C., U. S. Army, and Wiles H. Allen, Atlanta, Ga., Bret Verne Bates, Wheaton, Minn., Alfred E. Kinney, Astoria, Ore., John Edward Newhouse, Wilkinsburg, Pa., E. Roger Samuel, Mount Carmel, Pa., Warde Byron Smith, Frankfort, Ohio, and William Westrate, Zeeland, Mich., Lieutenants, M. C., U. S. Army.

Red Cross President Goes to France

Dr. Livingston Farrand, the new chairman of the central committee of the American Red Cross, sailed for France on March 9. He has gone abroad to study the problems of the organization in Europe and to confer with Henry P. Davison, now a member of the executive committee and formerly chairman of the war council, on the international conference of the Red Cross societies called to meet at Geneva thirty days after the declaration of peace. In France he will be joined by a number of American health experts and men from the other allied countries. He will remain abroad until the latter part of April.

Volunteer Medical Service Corps to Be Disbanded

The press reports that the Volunteer Medical Service Corps is to be dissolved on April 1. The list of members in the corps, it is understood, will be turned over to the Public Health Service.

Wounded Severely

The following officers are reported in the Official Bulletin as having been wounded severely: Lomax Gwathmey, Major, M. C., U. S. Army, Norfolk, Va.; Gail K. Butt, Johnstown, Ohio, Edgar R. Hiatt, Portland, Ind., and Walter Harvey Kirkpatrick, Hutchinson, Kan., Lieutenants, M. C., U. S. Army.

Prisoner Released

The following officer who has been prisoner in Germany, is reported to have been released and returned to France: John Steele Abbott, Lieut., M. C., U. S. Army, St. Paul, Minn.

Hospitals Abandoned

The War Department announces that U. S. General Hospital, Long Beach, N. Y., and U. S. General Hospital No. 35, West Baden, Ind., will be abandoned in the very near future. The commanding officer of the hospital at Long Beach has been directed to transfer all patients and dispose of personnel as rapidly as possible in order that salvage and restoration proceedings may start, March 15. General Hospital No. 35 is to be abandoned on June 30, at the expiration of the present lease and no patients are to be sent to this institution after May 1.

Distinguished Service Cross Award

The Commander-in-Chief, in the name of the President, has awarded the Distinguished Service Cross to Elam F. Srygley, Lieutenant, M. C., U. S. Army, Fourth Machine Gun Battalion, Greystone Park, N. J.

"For extraordinary heroism in action near Medeah Ferme, France, Oct. 8 to 9, 1918. When a platoon was being heavily gassed and under intense artillery and machine-gun fire, Lieutenant Srygley voluntarily left the shelter of his dressing station, proceeded to the line, and rendered invaluable aid to the wounded. On October 9, Lieutenant Srygley again left the shelter of his dressinig station, and under intense fire voluntarily went to the assistance of the wounded of the 141st Infantry."

Wounded, Degree Undetermined

The following officers are reported in the Official Bulletin as having been wounded (degree undetermined): Charles H. Mielke, Kansas City, Kan., and Frank C. Robinson, Martinsville, Ind., Majors, M. C., U. S. Army; Robert E. Walsh, Captain, M. C., U. S. Army, New York, and Robert H. Breslin, Providence, R. I., William A. Brewer, Memphis, Tenn., William A. R. Chapin, Springfield, Mass., Lacy W. Corbett, Bishopville, S. C., James S. McNett, Endicott, N. Y., Julius Pincus, Brooklyn, N. Y., Joseph E. Rapuzzi, Ithaca, N. Y., Joseph Armin Stackhouse. Ambler, Pa., and Orlyn Wiseman, Pedro, Ohio, Lieut [illegible] C., U. [illegible] Army.

Army Medical Boards Appointed.—Surgeon-General Ireland has appointed a Board of Medical Officers to take the subject under consideration and to make recommendations regarding the reorganization and the equipment on a peace basis, of Red Cross Base Hospitals. This board consists of Brig.-Gen. Francis A. C. Winter and Cols. Paul F. Straub and Robert U. Pattison. The surgeon-general has also appointed a board of medical officers to consider and make recommendations based on reports of medical officers concerning their experiences during the war. The latter board is comprised of Brig.-Gens. Francis A. Winter and John M. T. Finney and Col. Lewis A. Conner. All these except General Finney and Colonel Conner are members of the old Regular Army Medical Corps.

Results of Mental Tests at Camp Grant

According to a report by Lieut.-Col. George B. Lake, camp surgeon at Camp Grant, the results of the psychologic tests among the officers and men in the camp showed that the members of the Medical Corps rank lower than commissioned officers in any other branch of the service. Officers of the Quartermaster's Corps were rated highest, with an average of 147 points out of a possible 212 in the "Alpha" test. Infantry officers ranked second, with an average of 141.8 points while the Medical Corps was third, with an average of 138.6 points. Sixteen hundred officers were examined of whom 180 were from the Medical Corps. Only one soldier of the 90,000 taking the tests at the camp made 200 points out of a possible 212; seven made from 190 to 199. The showing among the noncoms and enlisted men is materially lower than that of the officers, the record among the enlisted men being made by those at the base hospital.

Praise for Naval Medical Officers

General John A. LeJeune, U. S. M. C., writing unofficially from the headquarters at Heddesdorf, Germany, to Rear Admiral William C. Braisted pays a high tribute to the officers of the Medical Corps of the Navy, and Naval Hospital Corps who served with the Second Division in France. He says:

> "The officers and men who served with the marine brigade cannot be commended too highly. Many of them received distinguished service crosses and many received the Croix de Guerre, and many more were recommended for crosses. * * *
>
> "*I desire especially to mention* Lieutenant Commander Boone. He is my ideal of what a medical officer should be. He is brave as a lion, untiring and self-sacrificing to an extraordinary degree, and a man of great ability and of the soundest judgment. He gave himself completely to his duty, and all of his thoughts were of the sick and wounded. He wore himself out and had to go to the hospital in December. It was an inspiration to be associated with such men as he and Lieutenant-Colonel Derby, the Division surgeon. Boone needs a good long rest. We cannot afford to lose him."

Difference in Pay Not Allowed

Paul Kurt Sauer, Lieut., M. C., U. S. Army, on duty at U. S. General Hospital No. 21, Carlisle, Pa., was denied a claim of difference of pay for exercising higher command from Oct. 3, 1917, to March 3, 1918. In denying the claim the comptroller says: "To entitle an officer to additional pay under Section 7, of the Act of April 26, 1898, for exercising in time of war 'a command above that pertaining to his grade' he must have been 'serving with troops operating against an enemy' and exercising such a command 'under assignment in orders issued by competent authority'. The term 'command,' as used in the statute, means an organization of troops. If the company to which an officer was assigned was a provisional company for training purposes only, and did not constitute a part of the normal organization of the Army, payment of the higher grade is not authorized. The service for which additional pay is claimed was rendered at Camp Funston, Kan. It does not appear that the claimant was exercising a higher command under any assignment in orders issued by competent authority, and it does not appear that he was serving with troops operating against an enemy."

Cited in Orders

The following medical officers attached to the Ninth Infantry Brigade, American Expeditionary Forces, were cited in orders, Dec. 31, 1918, for distinguished conduct in action:

HAROLD H. GOLDING, Lieut., M. C., U. S. Army, Sixty-First Infantry. For distinguished service while in action at Cunel, Oct. 14, 1918. Lieutenant Golding showed absolute disregard for personal safety while caring for and dressing wounded, under constant shell fire.

FRANK A. MOOSE, Lieut., M. C., U. S. Army, 61st Infantry. For distinguished service while in action in Bois-de-Foret near Farm-de-la-Madeline, Oct. 13, 1918. Lieutenant Moose showed absolute disregard for personal safety while caring for and dressing wounded under heavy shell fire, until the field was entirely cleared of the wounded, and remained after the battalion had been relieved for half an hour.

EDWARD H. TONELLE, Lieut. M. C., U. S. Army Detachment, 61st Infantry. For distinguished service while in action at Cunel, Oct. 14, 1918. Lieutenant Tonelle showed absolute disregard for personal safety while caring for and dressing wounded, under constant shell fire.

Charles T. Maxwell, Capt., M. C., U. S. Army, Sioux City, Iowa, has been twice cited for bravery, *the second time* for going through a heavy barrage and rescuing an officer.——Eli B. Moss, Major, M. C., U. S. Army, on duty with the 123d Feld Artillery, has been cited for bravery.——Emmett Merrick Harrison, Major, M. C., U. S. Army, Chattanooga, Tenn., has been cited for distinguished service in action near Handiomout and Manhewlls, Nov. 9, 10 and 11, 1918, by the example he set under fire of extreme violence, and by his excellent control of the sanitary detachment of the 323d Infantry, Major Harrison accomplished the evacuation of the wounded in the minimum of time. He also personally established and conducted a first aid station for a neighboring regiment, attending to many wounded of that regiment.——John T. Barbee, Major, M. C., U. S. Army, Jackson, Tenn., has been cited for bravery at Chateau-Thierry.

Weekly Bulletin A. E. F.

(Feb. 17, 1919)

MEDICAL SERVICES OF THE A. E. F.

According to Weekly Bulletin 45, at Base Hospital 116 there were 12,000 patients admitted between June 2 and Dec. 8, 1918. Of these, 4.113 were medical cases. A classification of the deaths shows that of 118 cases of bronchopneumonia, thirty-eight were fatal; of eighty-two cases of lobar pneumonia, sixteen were fatal; of six cases of empyema, four were fatal; of two cases of bacillary dysentery, both were fatal; of three cases of typhoid fever, one was fatal; in six mustard gas cases the patients died of a complicating bronchopneumonia.

At Camp Hospital 52, which was increased in capacity from 250 beds to 1,700 beds, there were admitted 14,293 cases from July, 1918, to Jan. 21, 1919. The medical cases comprised a large number of diseases, affording to the members of the medical personnel a wide range of experience.

WEEKLY REVIEW

Typhoid and paratyphoid show a further fall in incidence. The venereal disease rate has fallen noticeably in the District of Paris and the Arrondissement of Tours. No more cases of smallpox have developed. There has been a reduction in the incidence of chickenpox, diphtheria, meningitis and scarlet fever. The annual venereal disease rate per thousand of strength, for the week ending Feb. 5, 1919, for the whole A. E. F., is *37.26*.

The following cases of certain communicable disease were reported during the week ending February 16:

Section	Chicken-pox	Diph-theria	Dysen-tery	Measles	Menin-gitis	Para-typhoid	Scarlet Fever	Ty-phoid	Total
1.........	..	22	..	8	1	1	2	4	38
2.........	..	12	..	..	2	..	2	..	16
3.........	..	..	..	..	..	..	..	..	..
4.........	..	..	..	..	..	..	..	..	..
5.........	1	2	..	1	4	..	1	..	9
6.........	..	4	..	2	..	..	..	1	7
7.........	..	..	..	..	..	..	..	..	..
Advance..	3	27	3	13	19	1	11	27	104
Intermed.	..	12	1	8	8	3	8	2	42
Paris.....	..	..	..	2	..	..	..	..	2
Total...	4	79	4	34	34	5	24	34	218

SICK MEN ON TROOP TRAINS

Sacrifice of life from preventable disease results from permitting sick men to travel on troop or passenger trains. Medical examination of men before entrainment for detection of colds, cough, fevers, rashes, etc., must be thoroughly carried out to prevent the development of pneumonia, meningitis, scarlet fever, etc. Patients with these diseases are taken from the trains every day at numerous coffee stops and traffic junctions in the A. E. F. It is the medical officers' business to save every man who is willing to take a chance in order to get home sooner by ignoring a splitting headache and a sore throat. The men's ignorance of the risks they run must not be allowed to contribute to the A. E. F. death rate.

Typhoid and Paratyphoid in the A. E. F.

Fevers of the typhoid-paratyphoid group have continued to appear in many units of the American Expeditionary Forces during the past five or six months. *Weekly Bulletin 46,* February 24, in detailing some investigations of these diseases in several of the divisions, says that the typhoid-paratyphoid carrier rate among all organizations which passed through epidemics of diarrhea or dysentery has been unusually large during the past six months. There have been fifty-nine cases of typhoid-paratyphoid reported from the 79th division since November 1, and an analysis of the epidemic in this division, which referred particularly to carriers, gave some interesting results. Particular attention was given to the cooks and kitchen help. A total of 336 cooks were examined, which included practically all the cooks of the division. Of these men, fifty-seven, or 17 per cent., gave histories of recent attacks of diarrhea; some of them intermittent. Carriers of typhoid or paratyphoid were found as follows: In the 316th Infantry fifteen carriers were found in three companies, among whom three were found in the kitchen; in the 315th Infantry one case was found in each of two companies, and one carrier was found in each of three kitchens; in the 314th Infantry there were seven cases in two companies and none in the third company. Two carriers were found in the kitchen in the latter company and one each in the other two companies. This shows the possibility of transmission through the agency of the kitchen personnel. More than twenty carriers of typhoid and paratyphoid in the A. E. F. were reported in the six weeks prior to the date of this bulletin.

In this connection, the chief surgeon of the A. E. F., Col. Walter D. McCaw, in Circular 69, dated February 17, calls attention to the continued appearance of this group of diseases, and says that medical officers of the forces have failed to grasp the significance of these reports, and that some officers are careless and do not properly appreciate their responsibilities in this regard. The excuse that "there is a war on" will not be tolerated longer. The circular then gives a summary of the incidence of the typhoid-paratyphoid group of diseases in the American forces, calls attention to the importance of early and complete case reports, takes up the clinical and laboratory diagnosis, their prevention and control, and particularly calls the attention of all officers to Sections 184 and 185 of Article 3 of the Manual of the Medical Department, and enjoins compliance. Accompanying the circular is a copy of the department instructions covering the technic of employing the triple lipovaccines.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Ariton—McFadden, A. D. (L.)
Birmingham — Drennen, W. E. (M.)
York—Oswalt, G. G. (L.)

ARIZONA

Bisbee—Shine, F. E. (M.)
Flagstaff—Manning, G. F. (L.)
Winslow—Hathaway, C. L. (L.)

ARKANSAS

Hot Springs—Coffey, G. C. (L.)
Jonesboro—Lile, L. M. (C.)
Moreland, W. H. (L.)
Texarkana—Dale, J. R., Jr. (L.)

CALIFORNIA

Big Pine — Buckingham, J. R. (L.)
Los Angeles — Bowman, W. B. (M.)
Oldham, J. Y. (C.)
Woodward, A. G. (L.)
Montibello — Brown, N. J., Jr. (L.)
Needles—Boland, A. E. (C.)
Oakland—Wilder, C. H. (C.)
Pomona—Swearingen, F. C. (L.)
Raudsburg—Maxwell, R. E. (L.)
San Francisco — Jackson, W. J. (L.)
San Mateo—Carlton, A. C. (M.)
Santa Barbara—Bell, C. A. (C.)
Saratoga—Burgess, G. W. (C.)

COLORADO

Colorado Springgs—Hoagland, H. W. (L. C.)
Denver—Fowler, H. L. (M.)

CONNECTICUT

Bridgeport—Garlick, G. B. (L.)
New Haven—Verdi, W. F. (M.)

DISTRICT OF COLUMBIA

Washington—Foley, T. M. (M.)

FLORIDA

St. Augustine—Spencer, J. J. (L.)

GEORGIA

Atlanta—Adkins, W. N. (C.)
Calloway, J. T. (C.)
Davis, E. C. (L. C.)
Columbus—Corby, F. L., Jr. (L.)
[illegible] C. D. (L.)
[illegible] L.)
Thomaston—Carter, E. W., Sr. (L.)

IDAHO

Harrison—Didier, F. W. (L.)
Nezperce — Anderson, C. M. N. (L.)
St. Anthony—Louis, J. D. (C.)

ILLINOIS

Cairo—Woelfle, J. E. (C.)
Chicago—Adler, H. M. (M.)
Baer, J. L. (C.)
Chouinard, C. R. (L.)
Gehl, W. H. (L.)
Goodman, J. A. (C.)
Oates, J. F., Jr. (L.)
Plice, W. A. (C.)
Rowe, P. H. (L.)
Small, J. C. (L.)
Wicks, S. (C.)
Dalton City—Stevens, S. L. (L.)
Danville—Garlitz, A. W. (L.)
Decatur—McDavis, J. T. (M.)
Downers Grove — Bebb, W. L. (C.)
East Moline—Johnson, G. F. (C.)
Granite City—Grayson, W. F. (C.)
Lawrenceville — Cooley, E. M. (C.)
Metcalf—Conn, H. I. (L.)
Olmsted—Caraker, O. (L.)
Peoria—Brown, H. E. (L.)
Cooper, H. E. (L.)
Perry—Dunn, B. B. (L.)
Rockford—Willander, A. A. (L.)
Silvis—Chapmann, W. D. (C.)
Taylorville—Meacham, G. T. (L.)

INDIANA

Evansville—Hewins, W. W. (L.)
Rose, B. S. (C.)
Fort Wayne—Mendenhall, E. N. (L.)
French Lick—Rogers, L. (C.)
Hammond—Lloyd, A. W. (C.)
La Fontaine—Fisher, M. F. (C.)
Marion—Gessler, W. F. (L.)
New Castle—Bitler, C. C. (L.)
Richmond—Grosvenor, J. J. (L.)
Tangier—Isaacs, H. H. (L.)
Terre Haute—Asbury, W. D. (C.)

IOWA

Columbia—Bridgman, H. L. (L.)
Davenport—Murphy, J. C. (L.)
Des Moines — Burcham, T. A. (M.)
Glomset, D. J. (M.)
Granger—Smith, C. G. (L.)
Hastings—Christy, E. (C.)
[illegible] L. (L.)
[illegible] (C.)
[illegible] E. B. B. (C.)
Sioux City—Koch, G. W. (C.)
Waterloo—Dunkelberg, E. I. (L.)

KANSAS

Eudora—Robinson, W. H. (L.)
Kinsley—Schrader, L. M. (L.)
Newton—Hertzler, R. H. (C.)
Wichita—Callahan, W. P. (L.)
Cheney, J. W. (C.)

KENTUCKY

Ashland—Keffer, S. (L.)
Bond—Hughes, H. A. (L.)
Bowling Green—Donnelly, A. D. (L.)
[illegible] M. (C.)
[illegible] W. (C.)
[illegible] (L.)
[illegible] L.)
Middlesboro—Gibson, T. T. (L.)
Paducah—Harkey, C. E. (C.)
Smalley—Stumbo, E. (L.)

LOUISIANA

Allendale—Lambeth, W. P. (L.)
Pelican—Burdett, J. C. (C.)

MAINE

Bangor—Crane, H. H. (C.)
Belfast—Kilgore, H. L. (C.)
East Millinocket — Scamman, C. L. (C.)
Frankfort—Walton, R D. (L.)

MARYLAND

Baltimore — Gamble, C. B., Jr. (M.)
Ketzky, J. W. (L.)
Talbott, J. E. (L.)

MASSACHUSETTS

Boston—Emerson, F. P. (M.)
Stone, G. H. (C.)
Brockton—Crimmin, L. P. (L.)
Cambridge—Fiege, H. R. (L.)
Kelleher, S. B. (C.)
Palmer—Hodskins, M. B. (M.)
Princeton—Lewis, E. S. (C.)
Wakefield — Richardson, I. W. (L.)

MICHIGAN

Detroit—Goux, R. S. (L.)
McLean, A. (Col.)
Eureka—Gregory, M. S. (C.)
Flint—Howe, A. N. (L.)
Litchfield—Atterbry, W. H (C.)
Mardellus—Jones, R. P. (L.)
Muskegon—Eastman, B. R. (L.)
Negaunee—Larson, C. N. (L.)

MINNESOTA

Le Sueur—LeClerc, J. E. (L.)
Minneapolis — Baldwin, L. B. (L. C.)
Scheldrup, N. H. (C.)
Stillwater — Humphrey, W. R. (L.)

MISSISSIPPI

Biloxi—Wallace, J. E. (C.)
Fulton—Senter, C. R. (L.)
Greenwood—Kennedy, J. P. (L.)
Gunnison—Simmons, J. D. (L.)

MISSOURI

Baring—Lumna, F. E. (L.)
California—Burke, J. P., Jr. (L.)
Dexter—Dieckman, W. C. (L.)
Jefferson Barracks—Will, W. H. (L.)
Kansas City—Abramopoulos, C. A. (C.)
Breyfogle, H. A. (C.)
King City—Blacklock, D. E. (C.)
Maitland—Beard, F. G. (L.)
Patton—O'Kelley, H. T. (L.)
St. Louis—Raithel, G. H. (M.)
Wright, C. G. (C.)
Waldron—Atchison, C. H. (L.)

MONTANA

Billings—Gerhart, E. A. (C.)
Butte—Ungherini, V. O. (L.)
Gildford—Hopkins, M. (L.)
Livingston—Stuart, J. E. (L.)
White Sulphur Springs — Rogers, W. B. (L.)

NEBRASKA

Cedar Rapids — Burgess, F. D. (C.)
Lodge Pole—Scott, F. W. (L.)
Swanton—White, H. E. (L.)

NEVADA

Kimberly—Larzalere, R. V. (L.)

NEW JERSEY

Atlantic City—Stern, S. (M.)
Williams, G. (C.)
Newark—Golann, D. L. (C.)
Hirschberg, S. (L.)
Paterson—McCoy, J. C. (L. C.)
Plainfield—Lufburrow, C. B. (C.)
Sea Isle City—Smith, T. (L.)
Trenton—Newell, W. A. (L.)
Verona—Davies, G. W. (L.)
West Hoboken—Olpp, A. E. (L.)
Urevitz, A. (L.)

NEW MEXICO

Roswell—Montgomery, C. F. (L.)

NEW YORK

Brooklyn — Pulvermacher, T. L. (L.)
Ruzicka, O. J. (L.)
Sullivan, R. P. (Col.)
Buffalo—Panzarella, C. C. (L.)
Persons, P. S. (L.)
Cobleskill—Beard, D. W. (C.)
New York—Brace, D. E. (C.)
Colp, R. (L.)
Curtin, J. F. (L.)
Farnum, W. B. (L.)
Ford, W. M. (M.)
Friedland, H. (L.)
Goldblatt, L. L. (L.)
Jones, M. F. (L.)
Leo, J. (C.)
Lobsenz, M. (L.)
Murphy, J. B. (M.)
Robertson, O. H. (M.)
Sautter, C. M. (L.)
Stadie, W. C. (L.)
Stowell, D. D. (L.)
Ossining—Cremon, L. D. (L.)
Rochester—Hanes, E. L. (M.)
Standish—Vosburgh, F. (L.)

NORTH CAROLINA

Buffalo City—Milliken, J. S. (L.)
Charlotte—Matheson, J. P. (C.)
Clinton—Kerr, J. D., Jr. (L.)

NORTH DAKOTA

Jamestown—Depuy, T. L. (L.)
Minot—Newlove, J. W. (L.)

OHIO

Canton—Feingold, S. J. (L.)
Kramer, J. G. (L.)
Cincinnati—DeCourcy, J. F. (L.)
Layport, W. L. (L.)
Tench, E. M. (L.)
Wottring, L. C. (L.)
Cleveland—Norlin, C. F. G. (L.)
Findlay—Coopers, E. H. (C.)
Hamilton—Skinner, D. M. (L.)
Lancaster—Shaeffer, A. M. (L.)
Mineral City — Puncheon, W. S. (L.)
National Military Home—Dixon, F. W. (L.)
Salem—Yaggi, H. K. (C.)
Toledo—Bowman, G. F. (L.)
Urbana—Barger, F. F. (L.)

OKLAHOMA

Canton—Buchanan, F. R. (L.)
Chelsea—Howard, W. A. (L.)
Lawton—Brashear, J. (C.)
Tulsa—Jergeson, H. A. (L.)
Wynnewood—Baker, R. L. (L.)

OREGON

Corvallis—Joseph, E. C. (L.)
Portland—Benson, R. L. (M.)
  Odell, J. M. (L.)
  Rosenberg, H. L. (L.)
The Dalles—Nitschke, E. W. (L.)
Warmspring — Fulkerson, C. D. (C.)

PENNSYLVANIA

Birdsboro—Lytle, F. P. (L.)
Carrick—Thomas, C. M. (L.)
Duryea—Winter, S. M. (L.)
McDonald—Douglass, J. A. (L.)
New Bloomfield — Stein, M. I. (L.)
Philadelphia — Albright, W. C. (C.)
  Boyle, J. P. (L.)
  Bransfield, J. W. (L.)
  Cattell, H. W. (M.)
  Laws, G. M. (C.)
  McCutcheon, J. H. (L.)
  McIntosh, W. P. (C.)
  Rhein, J. H. W. (M.)
  Walsh, W. H. (L. C.)
  Worden, C. B. (C.)
Pittsburgh — Pearlman, R. H. (L.)
  Wendt, C. I. (C.)
  Wiant, M. (L.)
Prospect—Lowry, W. T. (L.)
Reading—Schantz, H. F. (L.)
Ruffsdale—Poole, C. H. (L.)
South Bethlehem—Maysels, A. J. (L.)
Uniontown—Bierer, C. D. (L.)
Wapwallopen—Santee, C. L. (L.)

RHODE ISLAND

Bradford—Marr, D. F. (L.)
Providence—Churchill, K. (L.)
  Gallagher, H. J. (L.)
  Persky, M. A. (L.)
Woonsocket—Fitzpatrick, E. E. (L.)

SOUTH CAROLINA

Charleston—Preston, R. W. (L.)
Greer—Lanford, M. L. (L.)
Hagood—Moore, T. M. (L.)

SOUTH DAKOTA

Hecla—Carson, O. E. (L.)
Oldham—Long, G. J., Jr. (L.)

TENNESSEE

Arrington—Delaney, J. P., Jr. (L.)
Chattanooga—Steele, W. (L.)
Knoxville—LeTellier, F. S. (L.)
Memphis—Johnson, J. E. (C.)
Nashville—Harris, A. W. (C.)
Windrock—Black, M. L. (L.)

TEXAS

Austin—Kreisle, M. F. (L.)
  Murray, R. V. (L.)
Brady—McCall, J. G. (C.)
Brenham—Knolle, K. C. (L.)
Childress—Jernigan, J. H. (C.)
Corsicana—Jester, H. B. (M.)
Dallas—Mohler, D. A. (C.)
  Samuell, W. W. (C.)
  Smith, W. E. (L.)
Eastland—Whittington, H. D. (C.)
Eddy—Smartt, M. P. (C.)
Fort Worth—Lundy, S. A. (L.)
Galveston—Hastings, M. E. (L.)
Gilmer—Graydon, O. S. (L.)
Gonzales—Dunning, W. T. (L.)
Loraine—Stevenson, C. W. (L.)
Lott—Parrott, F. C. (C.)
San Antonio—Shipman, E. D. (L.)

UTAH

Salt Lake City—Galligan, J. J. (C.)

VERMONT

Manchester Center—Kelley, L. M. (L.)
St. Albany—King, J. S. (C.)
West Brattleboro—Hunter, G. B. (L.)

VIRGINIA

Clinchport—Fugate, C. R. (L.)
Norfolk—Browne, R. W. (M.)
  Crosby, A. V. (L.)
Richmond—Geisinger, J. F. (C.)
  Hillsman, B. (M.)
Winchester—Cox, W. (L.)

WASHINGTON

Centralia—Bickford, F. J. (C.)
Pullman—Patee, E. T. (L.)
Seattle—Nicholson, E. (L.)
  Peterson, J. R. (L.)
Toppenish—Wimberly, G. W. (L.)
Yakima—Loudon, J. P. (L.)
White Salmon—Gearhart, J. W. (L.)

WEST VIRGINIA

Charleston—Moore, J. W.
Spencer—Bull, S. W. (L.)
Summit Point—Womack, J. E. (L.)

WICONSIN

Allenton—Lynch, H. M. (L.)
Birnamwood—Baker, W. F. (L.)
Milwaukee—Brown, F. V. (M.)
Superior—Giesen, C. W. (C.)
Tomah—Sheehy, T. J. (L.)
Turtle Lake — Cornwall, W. B. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Smith, R.
Oakland—Kuder, W. S.
San Francisco—Butler, E. W.
  Chamberlain, W. E.
  Inman, T. G.

CONNECTICUT

New Haven—Townshend, R.

FLORIDA

Cocoa—Deboe, M. P.
Tampa—Hodgson, G. H.

ILLINOIS

Chicago—McNealy, R. W.

KANSAS

Rosedale—Sanders, C. E.

MASSACHUSETTS

Revere—Newton, W. C.

MISSOURI

Kansas City—Barker, F. C.
  Lamar, F. C.

MONTANA

Butte—Duthcer, J. E.

NEW HAMPSHIRE

Manchester—Pattee, H. S.
  Pherson, F. J.

NEW YORK

New York—Scaison, H.

OHIO

Canton—Leavenworth, L. C.
Cincinnati—Albers, F. J.
  Coppock, F. M.

OREGON

Portland—Smalley, R. B.

RHODE ISLAND

Providence—Buffum, W. P.
  DeWolf, H.

VIRGINIA

Danville—Fowlkes, W. B.

WASHINGTON

Seattle—Griswold, W. S.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Biltmore, N. C., from Long Beach N. Y., Lieut. G. LOTTERHOS, Birmingham.

To Camp Knox, Ky., from Camp Sheridan, Major W. O. H. PROSSER.

To Camp Bragg, N. C., as camp surgeon, from Camp Sheridan, Col. W. M. SMART.

To Washington, D. C., St. Elizabeth's Hospital, from Camp McClellan, Lieut. A. B. PICKERING, Plantersville. Surgeon-General's Office, from Camp Dix, Major W. E. DRENNEN, Birmingham.

Arkansas

To Camp Grant, Ill., base hospital, from Camp Sheridan, Lieut. R. C. WOLFE, Little Rock.

California

To San Francisco, Calif., from Camp Lewis, Major H. ROGERS, Bakersfield. Letterman General Hospital, from Camp Kearney, Major W. C. THOMAS.

To Vancouver Barracks, Wash., to examine the command for nervous and mental diseases, from Camp Kearney, Capt. C. B. DIRKS, Eagle Rock.

To Whipple Barracks, Ariz., from Camp Shelby, Capt. T. R. McNAB, Los Angeles; from Fort McDowell, Major O. D. ANDERSON, Ocean Park.

Colorado

To Denver, Colo., from Whipple Barracks, Capts. H. R. McGRAW, A. G. WALKER, Denver.

To Fort Ontario, N. Y., from Camp Logan, Capt. E. D. BURKHARD, Trinidad.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Major W. W. WILLIAMS, Denver.

Connecticut

To Camp Meade, Md., from Camp Polk, Lieut. E. K. DEVITT, Lyme.

To Camp Meigs, D. C., to examine the command for cardiovascular diseases, from Camp Sheridan, Lieut. H. A. SOLOMON, Waterbury.

To Fort McHenry, Md., from Camp Dix, Lieut. R. B. STREET, Suffield.

To Fort Sam Houston, Texas, base hospital, from Camp Logan, R. F. SCHOLL, New Haven.

To New Haven, Conn., from Camp Sheridan, Capt. R. V. QUINLAN, Meriden.

To Williamsbridge, N. Y., from Camp Meade, Lieut. H. A. MARTELLE, Hartford.

District of Columbia

To Camp Gordon, Ga., as commanding officer of base hospital, from Walter Reed General Hospital, Col. W. R. DAVIS.

To report to the governor, Panama Canal, from Army Medical School, Col. E. B. VEDDER.

To San Francisco, Calif., from New Haven, Major A. G. COMPTON, Washington.

Florida

To Camp Gordon, Ga., from Camp Sheridan, Capt. M. E. HECK, St. Augustine.

Georgia

To Biltmore, N. C., from Denver, Major W. A. JACKSON, Atlanta.

To Camp Grant, Ill., base hospital, from Camp Logan, Lieut. C. M. WEST, Atlanta.

To Camp Holabird, Md., as camp surgeon, from Camp Hancock, Lieut. Col. C. C. HILLMAN.

To Fort McPherson, Ga., from Camp Dix, Capt. C. E. DOWMAN, Atlanta.

To Walter Reed General Hospital, for instruction, and on completion *to his proper station*, from Colonia, Capt. J. M. BARNETT, Albany.

Illinois

To Camp Lee, Va., base hospital, from Camp Jackson, Lieut. H. H. SERED, Chicago.

To Camp Sheridan, Ala., to examine the command for nervous and mental diseases, from Camp Wheeler, Capt. J. K. POLLOCK, Elgin.

To Chicago, Ill., from Camp Jackson, Lieut. J. D. ELLIS, Chicago; from Long Beach, N. Y., Lieut. A. N. MUELLER, Rock Island.

To Colonia, N. J., from Camp Hancock, Capt. C. M. WILMOT, Speer.

To Fort Ethan Allen, Vt., from Chicago, Col. H. D. SNYDER.

To Fort Sheridan, Ill., from Fort Riley, Lieut. J. M. DOWNS, Morrison.

To Hoboken, N. J., from Camp Greene, Lieuts. S. E. LYNCH, R. W. E. SPRENG, Chicago; from Camp McClellan, Lieut. E. M. PRICE, Astoria.

To report to the commanding general, Northeastern Department, from Camp Logan, Major G. A. CLOTFELTER, Hillsboro.

To Washington, D. C., from Camp Grfant, Lieut.-Col. H. C. MICHIE. Surgeon-General's Office, from Camp Custer, Lieut.-Col. E. E. IRONS, Chicago.

The following order has been revoked: *To Plattsburg Barracks, N. Y.*, from Fort Sheridan, Capt. W. H. GAMBILL, Centralia.

Indiana

To Camp Logan, Texas, from Houston, Capt. J. B. MAPLE, Shelburn.

To Camp Wadsworth, S. C., base hospital, from Camp Gordon, Lieut. J. F. CASPER, Jasper.

To Camp Zachary Taylor, Ky., base hospital, from Camp Grant, Lieut. S. F. TEAFORD, Paoli.

To Fort Sam Houston, Texas, base hospital, *from* Walter Reed General Hospital, Capt. W. W. CAREY, Fort Wayne.

To Fort Sill, Okla., base hospital, from Camp Dix, Major E. K. WESTHAFER, Newcastle.

To Hoboken, N. J., from Camp McClellan, Lieut. B. J. WYLAND, Mishawaka.

To Lakewood, N. J., from Camp Hancock, Capt. W. L. ROYSTER Indianapolis.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Camp A. A. Humphreys, Capt. F. R. CLAPP, South Bend; from Camp Lee, Lieut. J. W. THOMSON, Garrett.

Iowa

To Camp Sherman, Ohio, base hospital, from Camp Sevier, Capt. E. L. HAWKINS, Council Bluffs.

To Fort Des Moines, Iowa, from Camp Dix, Major A. R. HOOVER, Des Moines.

To Hoboken, N. J., from Camp Dodge, Capt. J. H. TALBOY, Onawa; from Camp Greene, Lieut. T. H. CHESTNUTT, Mount Pleasant.

The following order has been revoked: *To Fort Sheridan, Ill.*, from Camp Dix, Major S. C. LINDSAY, Independence.

Kansas

To Camp Dodge, Iowa, base hospital, from Camp Logan, Capt. L. W. BAXTER, Columbus.

To Fort D. A. Russell, Wyo., from Camp Logan, Lieut. W. LAPAT, Larned.

To Hoboken, N. J., from Camp McClellan, Lieut. J. B. BLADES, Randall.

To Jefferson Barracks, Mo., from Camp Beauregard, Lieut. F. A. TRUMP, Ottawa.

To Washington, D. C., Surgeon-General's Office, from Fort Riley, Lieut.-Col. G. I. JONES.

Kentucky

To Camp Knox, Ky., as camp surgeon, from Camp Zachary Taylor, Lieut.-Col. V. E. MILTENBERGER.

To Fort Logan H. Roots, Ark., from Camp Dix, Lieut. C. E. KIELY, Covington.

To Fort McPherson, Ga., from Camp Gordon, Capt. F. W. HINKLE, Louisville.

To Jefferson Barracks, Mo., from Camp Wheeler, Major L. B. MOREMEN, Irvington.

Louisiana

To Fort Sheridan, Ill., from Camp Beauregard, Capt. T. B. CRACROFT, Kelly.

Maine

To Camp Upton, N. Y., base hospital, from Walter Reed General Hospital, Capt. L. B. HAYDEN, Livermore Falls.

Maryland

To Fort Ontario, N. Y., from Camp Sevier, Lieut. P. PEARLSTEIN, Baltimore.

To Garden City, N. Y., from Camp Greene, Lieut. V. L. MAHONEY, Cantonsville.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to Colonia, N. J.,* from Camp Shelby, Lieut. D. F. ELMENDORF, Baltimore.

Massachusetts

To Aberdeen, Md., from Camp McClellan, Lieut. C. S. NEISTADT, Fall River.

To Army Medical School for instruction, from Camp Dix, Capt. A. R. MACAUSLAND, Boston; from Walter Reed General Hospital, Lieut. E. KING, Boston.

To Chicago, Ill., from Camp Dix, Capt. H. C. MARBLE, Boston.

To East Norfolk, Mass., from Camp Dix, Capt. R. A. HATCH, Boston.

To Fort Leavenworth, Kan., from Fort McPherson, Major H. L. CONNER, Haverhill.

To Fort Ontario, N. Y., from Camp Wadsworth, Lieut. H. B. DUNHAM, Brockton.

To Hoboken, N. J., from Camp Greene, Capt. J. H. LAWRENCE, Brockton.

To report to the commanding general, Northeastern Department, from Camp Wadsworth, Major J. S. HART, Lincoln.

The following order has been revoked: *To Newport, News, Va.,* from Camp Grant, Lieut. A. E. MILLS, Somerville.

Michigan

To Camp Custer, Mich., base hospital, from Newport News, Major W. N. KENZIE, Richland.

Minnesota

To Chicago, Ill., from Camp Sevier, Capt. C. W. PAULSON, Minneapolis.

To Fort Snelling, Minn., from Camp Dix, Capt. A. E. DE TUNCQ, Preston.

To San Francisco, Calif., from Camp Lewis, Major J. F. AVERY, Minneapolis.

Missouri

To Army Medical School, from Camp Logan, Major M. C. STONE, Springfield.

To Camp Meade, Md., to examine the command for nervous and mental diseases, from Camp McClellan, Capt. F. J. SULLIVAN, St. Louis.

To Camp Pike, Ark., base hospital, from Fort Logan H. Roots, Lieut. E. D. EDWARDS, St. Louis.

To Cape May, N. J., from Camp Dix, Capt. C. A. VOSBURGH, St. Louis.

To Fort Des Moines, Iowa, from Camp Wheeler, Lieut. J. O'CONNELL, St. Louis.

To Fort Leavenworth, Kan., from Philadelphia, Major E. G. MARK, Kansas City.

To Fort Sam Houston, Texas, base hospital, from Fort McPherson, Capt. C. D. CANTRELL, Kansas City.

To Jefferson Barracks, Mo., from Camp Dix, Lieut. A. E. STRAUSS, St. Louis; from Camp Logan, Capt. G. S. DRAKE, St. Louis, from Camp Meade, Capt. F. C. ESSELBRUEGGE, St. Louis.

To Plattsburg Barracks, N. Y., from Camp McClellan, Capt. M. L. UNDERWOOD, St. Joseph.

To report to the commanding general, Eastern Department from Plattsburg Barracks, Major G. E. SCRUTCHFIELD, Marshall.

To St. Louis, Mo., from Fort Sheridan, Major F. W. BAILEY, St. Louis.

Nebraska

To Camp Dodge, Iowa, base hospital, from Camp Logan, Capt. F. A. WELLS, Axtell.

To Camp Jackson, S. C., base hospital, from Camp Greene, Capt. C. H. NEWELL, Omaha.

To Fort Des Moines, Iowa, from Camp Dix, Major H. W. ORR, Lincoln.

To Fort Leavenworth, Kan., from Fort Sheridan, Capt. D. C. HILTON, Lincoln.

New Hampshire

To Camp Meade, Md., base hospital, from Walter Reed General Hospital, Capt. B. W. CARR, Pittsfield.

To Camp Zachary Taylor, Ky., base hospital, from Camp Logan, Capt. F. N. SHIPP, Pittsfield.

New Jersey

To Fort Ontario, N. Y., from Lakewood, Lieut. J. R. COMMORATO, Jersey City.

To Fort Riley, as camp surgeon, from Camp Dix, Col. R. L. CARSWELL.

To Hoboken, N. J., from Camp McClellan, Capt. M. W. CURRAN, Chatsworth; Lieut. F. G. STRAHAN, Long Branch.

To report to the commanding general, Northeastern Department, from Camp Dix, Lieut. H. E. GILLETT, Ramsey.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. C. C. COLLINS.

The following order has been revoked: *To Newport News, Va.,* from Camp Hancock, Lieut. C. B. KEENEY, Summit.

New Mexico

To Washington, D. C., from Fort Bayard, Major B. F. MORRIS.

New York

To Army Medical School, from Camp Meade, Major O. TEAGUE, Staten Island.

To Boston, Mass., from Fort Logan H. Roots, Lieut. F. J. LEONARD, Ilion.

To Camp Dix, N. J., base hospital, from Camp Hancock, Lieut. M. B. SPONSLER, New York; from Camp Upton, Lieut. C. BARNERT, New York.

To Chicago, Ill., from Camp Logan, Lieut. J. M BLANK, Brooklyn; from Edgewood, Md., A. I. LOWENTHAL, New York.

To Colonia, N. J., from Camp Sevier, Lieut. L. D. ROCHE, New York.

To East Norfolk, Mass., from Camp Upton, Lieut. J. M. L. BRUNO, Brooklyn.

To Eastview, N. Y., from Camp Dix, Major L. B. MEYER, New York.

To Fort McHenry, Md., from Camp Beauregard, Capt. W. G. BOWERMAN, New York; from Camp Dix, Lieut. L. K. HENSCHEL, New York.

To Fort Ontario, N. Y., from Lakewood, Lieut. E. R. WARE, New York.

To Governors Island, N. Y., from New York, Major W. T. HELMUTH New York.

To Hoboken, N. J., from Camp McClellan, Capt. V. B. HAMLIN, Clinton; from Long Beach, N. Y., Lieut. J. L. MANGANO, Buffalo.

To Lakewood, N. J., from Camp Gordon, Lieut. A. TOWBIN, New York.

To Otisville, N. Y., from Camp Dodge, Capt. O. S. ESSENSON, New York; from Camp Meade, Lieut. R. J. LYNCH, Otisville.

To Philadelphia, Pa., from Camp Sevier, Capt. J. H. EVANS, Buffalo.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Camp Lee, Lieut. W. W. TRACEY, New York.

To San Francisco, Calif., Letterman General Hospital, from Fort Snelling, Major A. S. CLARK, New York.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station,* from Camp Upton, Lieut. T. J. RYAN, New York; from Lakewood, Capt. J. B. RINGLAND, Oswego; from Pittsburgh, Lieut. W. L. MUNSON, Granville.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. T. W. SALMON, New York.

North Carolina

To Biltmore, N. C., from Camp Dix, Major R. F. LEINBACK, Charlotte.

To Fort Ontario, N. Y., from Camp Wadsworth, Lieut. J. M. EARNHARDT, Rockwell.

To Hoboken, N. J., from Camp Greene, Lieut. N. S. STIREWALT, Greensboro.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Capt. J. P. MATHESON, Charlotte.

North Dakota

To Hoboken, N. J., from Camp Greene, Major P. G. REEDY, Regan.

Ohio

To Camp Sherman, Ohio, base hospital, from Camp Greene, Capt. H. L. BABCOCK, Waterville; Lieut. C. G. DEW, Nelsonville.

To Denver, Colo., from Camp Abraham Eustis, Capt. W. S. P. DONEHOO, Wintersville.

To Newport News, Va., from Camp Beauregard, Lieut. E. HUFFER, Columbus.

To Plattsburg Barracks, N. Y., from Camp Zachary Taylor, Lieut. C. C. SHEARER, Cincinnati.

To St. Louis, Mo., from Camp Logan, Lieut. L. F. LAUF, Columbus.

The following order has been revoked: *To Fort Sheridan, Ill.,* from Fort Oglethorpe, Lieut. W. M. LEONARD, Cleveland.

Oklahoma

To Camp Jackson, S. C., from Fort Riley, Lieut. W. M. RIVERS, Douthat.

Pennsylvania

To Army Medical School, from Camp Logan, Capt. J. C. SIMPSON, Morristown.

To Camp Pike, Ark., base hospital, from Biltmore, Major C. P. BROWN, Glen Olden.

To Camp Shelby, Miss., base hospital, from Camp Hancock, Major F. B. UTLEY, Pittsburgh.

To Fort Snelling, Minn., from Camp Dix, Capt. E. H. ERNEY, Philadelphia.

To Pittsburgh, Pa., from Long Beach, N. Y., Lieut. H. C. GRIM, Trumbaursville.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Army Medical School, Capt. C. E. LLEWELLYN, Philadelphia.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station,* from Fort McHenry, Capt. W. T. ELLIS, JR., Philadelphia.

The following order has been revoked: *To Camp Sherman, Ohio,* base hospital, from Williamsbridge, Major J. R. V. WOLFE, Norristown.

Philippine Islands

To San Francisco, Calif., from Philippine Islands, Major A. M. GIFFIN, Manila.

Rhode Island

To Camp Jackson, S. C., base hospital, from Camp Sevier, Capt. C. E. HAWKES, Providence.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Camp Meade, Lieut. J. E. McCABE, Providence.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station,* from Camp Dix, Lieut. E. M. PORTER, Providence.

To Washington, D. C., St. Elizabeth's Hospital, from Markleton, Capt. H. G. PALMER, Providence.

South Carolina

To Camp Wadsworth, S. C., base hospital, from Camp Greene, Lieut. W. E. FULMER, Columbia.

Tennessee

To Camp Bowie, Texas, base hospital, from Camp Logan, Lieut. H. P. CALMES, Memphis.

To Fort McPherson, Ga., from Camp McClellan, Capt. T. M. HARPER, Medina; from Hoboken, Capt. R. W. DAKE, Nashville.

To Oteen, N. C., from Camp Sheridan, Capt. F. B. BREWER, Nashville.

To report to the commanding general, Northeastern Department, from Camp Gordon, Major E. R. HOCHSTETTER, Jr., Chattanooga.

Texas

To Camp Travis, Texas., base hospital, from Fort Sheridan, Capt. P. M. FANCHER, Houston.

To Fort Sam Houston, Texas, base hospital, from Camp Logan, Lieuts. R. A. THARP, Austin; G. G. WYCHE, Iago.

To Hoboken, N. J., from Camp MacArthur, Lieut.-Col. S. W. FRENCH.

To Jefferson Barracks, Mo., from Camp Logan, Capt. J. E. COOKE, Mart.

To Newport News, Va., from Camp Beauregard, Capt. A. M. FREELS, Denison.

To report to the commanding general, Northeastern Department, from Camp Beauregard, Lieut. J. W. McKEE, Jr., Houston.

To Rockefeller Institute for instruction, and on completion *to his proper station,* from Hoboken, Lieut. L. F. BLAND, Dallas.

To San Francisco, Calif., from Camp Abraham Eustis, Capt. W. V. PRUETT, Brownsville.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station,* from Fort McHenry, Capt. M. W. SHERWOOD, Temple.

Utah

To Denver, Colo., from Fort Douglas, Lieut. J. M. GRAHAM, Fruita.

To Hoboken, N. J., from Camp Shelby, Lieut. L. C. POTTER, Provo.

Vermont

To Camp Bowie, Texas, base hospital, from Camp Wadsworth, Capt. P. J. McKENZIE, Burlington.

To Hoboken, N. J., from Long Beach, N. Y., Lieut. A. L. FOGG, Underhill Center.

Virginia

To Fort McHenry, Md., from Camp Greene, Capt. R. S. FITZGERALD, Richmond.

Washington

To Army Medical School for instruction, from Camp Dix, Major J. C. GRAVES, Jr., Spokane.

To Fort George Wright, Wash., from Hoboken, Lieut.-Col. S. E. LAMBERT, Spokane.

To report to the commanding general, Western Department, from Camp Lewis, Capt. J. R. STEAGALL, Tacoma.

To San Francisco, Calif., Letterman General Hospital, from Army Medical School, Major C. F. EIKENBARY, Spokane.

Wisconsin

To Camp Custer, Mich., base hospital, from Camp Upton, Lieut. H. C. SALTZSTEIN, Milwaukee.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Lieut.-Col. N. M. BLACK, Milwaukee.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. C. C. PIERCE, proceed to Chattanooga, Tenn, for inspection of conditions relative to the venereal disease clinics.

Asst. Surg.-Gen. A. J. McLAUGHLIN, proceed to New York and Boston for inspection of public health activities.

Asst. Surg.-Gen. L. L. LUMSDEN (*Reserve*), procced to Lexington, Ky., to address the Kentucky Council of Defense.

Sen. Surg. FAIRFAX IRWIN, report at bureau of conference relative to taking over certain hospitals offered by the War Department.

Sen. Surg. P. C. KALLOCH, deliver lectures on health matters at Rockland, Me., on request of U. S. Shipping Board.

Sen. Surg. J. H. WHITE, proceed to various ports in the West Indies, Mexico and Central America for the purpose of investigating sanitary conditions.

Sen. Surg. L. L. WILLIAMS, proceed to Palo Alto, Calif., to make inspection of an army hospital at that place.

Sen. Surg. J. O. COBB, proceed to Madison, Wis., to address vocational conference at the university.

Surg. J. S. BOGGESS, relieved at San Antonio, Texas, proceed to Alexandria, La., to take charge of cantonment hospital at Camp Beauregard.

Surg. JOHN M. HOLT, directed to confer with commanding officer relative to taking over army base hospital at Camp Logan.

Passed Asst. Surg. G. A. KEMPF, proceed to Perryville, Md., to inspect buildings to determine their suitability for utilization as hospitals.

Passed Asst. Surg. W. C. WITTE, relieved at Des Moines, Ia. Proceed to Washington, D. C., for duty in formation of reserve corps.

Acting Asst. Surg. R. E. GRAMLING, relieved at Leavenworth, Kan. Proceed to Salt Lake City, for duty in venereal disease control.

Acting Asst. Surg. WILLIAM M. KEEN, proceed to Harrisburg, Pa., for duty in influenza control.

Acting Asst. Surg. R. H. TRIMBLE, proceed to Harrisburg, Pa., for duty in influenza control.

Asst. San. Engr. SOL. PINCUS, proceed to Washington, D. C., for temporary duty in connection with studies of stream pollution.

Asst. San. Engr. C. P. RHYNUS, relieved at Nitro, W. Va., proceed to Washington, D. C., for duty in investigations of influenza and studies of stream pollution.

Asst. San. Engr. FRANK R. SHAW, relieved at Lake Charles, La. Proceed to Columbus, Ga., for duty in extracantonment sanitation.

Biochemist M. X. SULLIVAN, proceed to Washington, D. C., for temporary duty at the Hygienic Laboratory.

Asst. Educational Director JOHN A. VAN DIS, proceed to Detroit to attend meeting of the International Convention of Boy Workers, March 17-19.

Regional Consultant LOUIS HOUGH, proceed to Columbus, Ohio, to assist in venereal disease control work.

Asst. Chemist E. J. CASSELMAN, proceed to Springfield, N. J., for studies in connection with the disposal of chemical wastes.

San. Insp. BEN G. MOULTON, proceed to Des Moines, Ia., proceed to Columbus, Ga., for duty in extracantonment sanitation.

Engr. Draftsman B. H. GRAFF, proceed to Perryville, Md., to inspect buildings to determine their suitability for utilization as hospitals.

Pharmacist CHARLES SLOUGH, relieved at the marine hospital at Mobile, Ala. Proceed to Augusta, Ga., for duty in hospital at Camp Hancock.

Pharmacist THOMAS C. ARMSTRONG, proceed to marine hospital at Chelsea, Mass., for examination to determine his fitness for promotion.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Reported Rabies.—H. F. Gray of the California State Board of Health has been making investigation regarding the report of rabies existing in Surprise Valley, Modoc County, and also at Susanville, and has sent to the state laboratory several heads of coyotes supposed to have died from rabies.

Violation of Medical Act.—Dr. T. Leung, Los Angeles, a Chinese herbalist, is said to have been arrested, March 5, charged with the violation of the state medical practice act.——Drs. George F. Frissell and Augusta Stone, Los Angeles, charged with using the mails to promote illegal surgical practices, have their cases set for trial, May 20 and May 21, respectively.

Charged with Fraud.—Indictments charging use of the United States mails in a scheme to defraud are said to have been returned by the federal grand jury, March 1, against R. Haruki, G. Suzuki, T. G. Nacayama, B. Nakaraha, T. H. Hayashi, Watanobi and Ochiai, Japanese physicians who were arrested several months ago on charges of falsifying their examination papers before the state board of health when applying for their certificates to practice medicine in the state.

Personal.—Slocomb R. Edwards, San Francisco, Lieut., M. C., U. S. Army, has been discharged from the service and has been appointed chief of the ear, nose and throat department of Leland Stanford Junior University School of Medicine, San Francisco.——Alanson Weeks, Major, M. C., U. S. Army, San Francisco, has been commissioned lieutenant-colonel and is in command of Base Hospital No. 30, American Expeditionary Forces, France.——J. Ross Moore, Major, M. C., U. S. Army, Los Angeles, has returned from France.

DISTRICT OF COLUMBIA

Personal.—Dr. John P. Frey, Washington, has been appointed assistant health officer of the district.

Public Health Service Hospital Turned Over to District.—Rupert Blue, Surg.-Gen., U. S. P. H. S., announces that the District Influenza Emergency Hospital, conducted by the Public Health Service, at 612 F Street N.W., Washington, has been turned over to the district authorities under recent congressional appropriations made for that purpose. The hospital has been in operation since Jan. 1, 1919, under the charge of Act. Asst. Surg. Ernest W. Scott. During this period 221 patients were attended, of whom 193 have recovered and twenty-eight died.

GEORGIA

Hospital Items.—The New Parkview Hospital at Gainesville was opened to receive patients, March 5. The hospital has accommodation for ten patients, and negotiations are under way to increase the accommodation to twenty-five.

Violation of Drug Act.—In the federal court at Athens, February 21, Dr. Jess W. Power, Athens, is said to have been found guilty on one count of the indictment charging him with violation of the Harrison Narcotic Law in that he failed to make duplication of orders sent to drugstores for drugs. He was acquitted on the charge of the unlawful selling of drugs.

New Officers.—At the annual meeting of the Bartow County Medical Society held in Cartersville, March 5, Dr. Samuel M. Howell was elected president, Dr. William C. Griffin vice president, and Dr. Tanner Lowry secretary-treasurer, all of Cartersville.——Lowndes County Medical Society, at its annual meeting held in Valdosta, February 11, elected Dr. Dewitt W. Freeman president, Dr. Frank H. Thomas vice president, and Dr. Joyce F. Mixson secretary-treasurer, all of Valdosta.——At the annual meeting of Ware County Medical Society held in Waycross, Dr. George N. MacDonell was elected president, Dr. James H. Latimer vice president, and Dr. William F. Reavis, secretary-treasurer, all of Waycross.

Personal.—Ferdinand H. Herrmann, Capt., M. C., U. S. Army, Eastman, after a long service overseas as surgeon, Second Engineers, Second Division, has returned home bringing with him the Croix de Guerre with Palms.——Dr. Harold F. McDuffie, Atlanta, has been appointed a member of the state board of medical examiners to fill the unexpired term of the late Dr. Richard E. Hinman.——Giles Hathcock, Lula, and John L. Walker, Waycross, have been reappointed members of the state board of health for a term of six years.——Frank K. Boland, Major, M. C., U. S. Army, Atlanta, who went overseas with the Emory Hospital Unit, reached New York, February 26.——W. Nevin Adkins, Capt., M. C., U. S. Army, Atlanta, has returned home after six months' service in France.——Dr. Charles D. Cleghorn, Macon, retired as superintendent of the Macon Hospital, March 1.——Dr. Wiley S. Ansley, Decatur, has succeeded Dr. W. J. Houston, who resigned as physician of Dekalb County.——Dr. Henry W. Terrell, LaGrange, has been appointed local surgeon at LaGrange for the Atlanta and West Point Railway, and the Western Railway of Alabama.——The office of Dr. Eli F. Sapp, Albany, was destroyed by fire, February 28.——Dr. George M. Anderson, Ray City, has been elected health commissioner of Moultrie and Colquitt County, succeeding Dr. Lorick T. Patillo, Atlanta, resigned.

ILLINOIS

Personal.—Luther B. Highsmith, Lieut., M. C., U. S. Army, Flat Rock, returned with the officers of Base Hospital No. 22 from abroad and reached Camp Grant, March 12.——Dr. J. Allen Cotton, Peoria, was shot and seriously wounded by a sergeant of the Eighth Illinois Infantry, at Peoria, March 9. ——Dr. William A. Trout, Atwater, was stricken with cerebral hemorrhage while making a professional call between Atwater and Carlinville.——Dr. Francis H. Fleege, Galena, who has been seriously ill with inflammatory rheumatism at St. Francis Hospital, is reported to be improving.

For Better Housing.—A bill has been introduced into the legislature to improve housing conditions in Illinois and ultimately to abolish the slums which exist in almost every large town. The bill is sponsored by Senator Kessinger, and its underlying principles have been endorsed by the governor, who called attention to the need of better housing conditions in the state in his January message to the legislature. The bill contains requirements as to height, size of rooms, lighting, sanitary facilities, etc., of tenement houses, and applies to all cities having a population of 10,000 or over. It vests enforcement in the state and local departments of health.

Illegal Practitioners Prosecuted.—It is reported that, notwithstanding the fact that the appellate court affirmed the opinion of the circuit court of Macon County imposing a heavy fine on James E. Kane of Decatur for violating the Illinois medical practice act by practicing as a chiropractor without a state license, Kane proceeded with his unlawful practices. The Department of Registration and Education collected further evidence against him, on which he was indicted and has again been adjudged guilty by the court. His attorney has entered a motion for a new trial, which will be disposed of in due course. Not satisfied with the opinion of the appellate court that he cannot practice as a chiropractor without a state license, Kane has appealed his case to the supreme court. It was taken on call at this term, and an opinion will probably be handed down at the next term. The appeal is based on the contention that the medical practice act is unconstitutional so far as it relates to chiropractors. ——On complaint of one of the inspectors of the department, it is reported, Eugene Childress of East St. Louis was arrested for practicing medicine without a license. He was found guilty, but did not have enough money to pay the fine. The court sentenced him to six months of hard labor in the Belleville stone quarry.

Chicago

Lethargic Encephalitis.—After a consultation with physicians who have treated cases of this disease in Chicago, the commissioner of health issued a notice that the disease is now a reportable one.

Smallpox.—As the result of the discovery of three cases of smallpox in the Revere House, March 11, more than 100 of the guests and employees of the hotel were vaccinated by health department officials.

Illegal Practitioner Fined.—M. Krawczyk of 904 Milwaukee Avenue is said to have been arrested by the Department of Registration and Education of the State of Illinois for practicing medicine without a license and to have been fined $50 and costs.

Death Rumor Unfounded.—The report of the death of Dr. Samuel J. Walker which has appeared in local papers has not been confirmed. It is believed that the officer who died from typhus fever in Macedonia was a Lieutenant Walker, not a medical man.

Officers Returned from Abroad.—Leon C. Garcia, Lieut.-Col., U. S. Army; Herbert Walker, Major; Eugene Cary, Capt.; Irvin S. Koll, Capt.; Ralph H. Kuhns, Capt., and Lloyd H. Simmons, Lieut., M. C., U. S. Army, who have been on duty with the American Expeditionary Forces in France, have been released from military duty.

Violations of Narcotic Law.—Five Chinamen waived examination before United States Commissioner Louis F. Mason, March 10, and were held on charges of violating the Harrison Narcotic Law. The arrest followed a raid a week before in which $25,000 worth of opium was found and confiscated. ——While the police were searching a laundry in West Madison Street, in which a fire with two fatalities had occurred, about $500 worth of opium and heroin was discovered.

Personal.—Dr. Alice Hamilton has been appointed assistant professor of industrial medicine in Harvard Medical School. She is the first woman to receive a faculty appointment at the Harvard Medical School. Dr. Hamilton graduated in medicine from the University of Michigan in 1893, was professor of pathology in the Northwestern University Woman's Medical School for three years, bacteriologist to the Memorial Hospital for Infectious Diseases, Chicago, for eight years, and has been engaged since 1910 in the investigation of industrial diseases for the federal Department of Labor.——Dr. Abraham L. Lash has been appointed surgeon in charge of the emergency hospital of the Chicago and Eastern Illinois Railway, at Oak Lawn.

INDIANA

Diphtheria in Fort Wayne.—Dr. Maurice R. Lohman, health commissioner of Fort Wayne, reported that there are nine cases of diphtheria in the city among seven families in widely separated districts.

License Revoked.—The state board of medical examiners, February 26, is said to have revoked the license of Dr. George F. Smith, Bicknell, because of alleged misrepresentation when he obtained his license to practice medicine in Indiana.

Smallpox.—Smallpox is reported from Elkhart, La Porte and South Bend.——In Huntingdon County, outside of the city of Huntingdon, there were fourteen cases of smallpox in January, and it is now estimated that there are twenty-five cases, all mild in type.

Asylum Hospital Burns.—The men's building of the Eastern Indiana State Hospital for the Insane, Richmond, was burned, March 5. One patient was burned to death and a second is not accounted for. Twenty-two bedridden patients were removed without injury. The property loss amounted to $25,000.

Personal.—Dr. Frederick A. Tucker, Lieut.-Col., M. C., U. S. Army, Noblesville, who had been in charge of Base Hospital No. 51, near Verdun, since June last, has returned from France.——Dr. Adam L. Schneider, Fort Wayne, has been appointed vice president, and Dr. Lester I. Ofner, treasurer of the Allen County Antituberculosis Society.——John B. Fattic, Lieut.-Col., M. C., U. S. Army, Anderson, has returned from overseas.——Dr. George H. Brodbeck, Roann, is reported to be seriously ill with paralysis.——Dr. John N. Hurty, secretary of the state board of health, has been made a fellow and awarded a life membership in the American Pharmaceutical Association.

KANSAS

Influenza at Wichita.—During the last week in February there were 250 cases of influenza and sixteen deaths in Wichita, the highest figures for any one week during the new year.

Handbook of Child Hygiene.—The division of child hygiene of the Kansas State Board of Health, under the directorship of Lydia Allen DeVilbiss, has issued a handbook of child hygiene, which, among many other topics, discusses the care of the children and the feebleminded, the wards of the state, quoting from reports of investigations into the child caring and maternity homes of the state which show a most unsatisfactory state of affairs. An analysis is given of Kansas child welfare legislation, and a plea is made for a thorough investigation and a complete codification of such legislation.

MARYLAND

Typhoid Fever.—The health department of Baltimore warns all residents of the new annex to the city, including Overlea, Mount Washington, and Roland Park, to adopt all possible precautions against development and spread of typhoid fever.

Personal.—Charles W. Maxson, Capt., M. C., U. S. Army, Steubenville, Ohio, has just been released after imprisonment for nearly eleven months in Germany. Captain Maxson was attached to the Fifth British Army and was captured because he refused to leave the wounded men he was caring for.——Dr. Clarence A. Neymann, Baltimore, has been appointed superintendent of the Cook County Psychopathic Hospital, succeeding Dr. Adam Szwajkart.——Dr. Norburu Ishida Baltimore, is reported to have been indicted by the grand jury of Baltimore County for the murder of Dr. George B. Wolff.——Col. William H. Welch, director of the School of Hygiene, Baltimore, established by the Rockefeller Foundation at the Johns Hopkins University, has sailed for France, where he will attend a health conference of the International Red Cross.——Dr. Alexander J. Gillis, Baltimore, formerly assistant superintendent at Sydenham Hospital, has been decorated with the Military Cross by the British government for bravery and distinguished service in the war. He was gassed while on a visit to the first-line trenches.——Dr. William Y. Hollingsworth, Bel Air, formerly connected with the surgery department at Sparrows Point, has also been decorated with the Military Cross, for bravery and distinguished service.

MASSACHUSETTS

Personal.—Dr. John Parr has been appointed and confirmed as city physician of Methuen to fill the unexpired term of the late Dr. Richard H. Lawler.

Boards of Health Meet.—At the regular quarterly meeting of the Massachusetts Board of Health, held at Pemberton recently, Dr. John S. Hitchcock, Northampton, acted as chairman in the absence of the president, Dr. Francis F. Mahoney, Westboro. A paper was ready by Fred Johnson, secretary of the Civilian Relief Committee of the Red Cross, on "Relief Work in Civilian Communities," and Dr. Charles E. Simpson, Lowell, city health officer, delivered an address on "Large Concentration Camps and Their Relations to Civilian Communities."

MONTANA

Personal.—Dr. Alonzo B. Eckerdt, Helena, has been appointed temporary health officer of Bozeman, succeeding Dr. Joseph Piedalue, resigned.——Herbert H. Judd, M. C., U. S. Army, Bozeman, has been occupied since his return from France in escorting wounded and sick soldiers from New York to hospitals in various parts of the United States.

Reduction in Typhoid.—The biennial report of the Montana State Board of Health shows that in 1917 there were 522 cases of typhoid fever reported in the state, while in 1918 there were only 179. The reduction is ascribed to the field investigation, which resulted in the improvement of the water supply. During this period 122 field investigations or sanitary surveys were made of public water supplies and 193 surveys of private water supplies. There were 833 laboratory investigations and 2,716 analyses of water.

Influenza.—At a meeting of the physicians of Helena, February 21, for the discussion of the influenza situation, it was disclosed that there were at that time 156 cases of the disease in the city, but it was said to be in light form, a characteristic of recent cases. There had been only an occasional death in the previous two months, and none in the previous ten days. It was noted that the disease had lately attacked a greater proportion of children, in whom the disease lasted on an average about five days as against about eight days for adults.

NEW YORK

Personal.—Dr. M. Louise Hurrell, Rochester, director of the American Women's Hospital at Luzanoy, France, and several members of the hospital staff have been decorated by the French government for their work in stamping out typhoid fever in certain cantons of the Seine, the Marne and the Aisne.

Poliomyelitis After-Care.—The records of the state health department show that during the year 1918, forty-two clinics for the after-care of poliomyelitis cases have been held in thirty-five municipalities in this state. The total number of cases examined was 654. Of this number 456 had attended one or more previous clinics. Of these 456 patients who had previously attended clinics and were under the care of field nurses, forty-nine were cured or practically normal, and 296 were improved. During 1918, 823 pieces of new apparatus were delievered to patients. Of the 1,700 patients that have been under state care, about 1,000 are wearing some form of apparatus ordered through the state department of health and applied by the nurses. There were about seventy new cases of poliomyelitis in the state during the year.

Civil Service Examinations.—The Civil Service Commission of the State of New York announces the following examinations to be held, April 26. Applicatons should be made before April 14, to the State Civil Service Commission. Albany:

Director of laboratory, department of health officer; port of New York, Rosebank, S. I., N. Y., salary, $3,500. This position requires a theoretical and practical knowledge of bacteriology as well as the knowledge of general pathology sufficient to conduct examinations to determine diagnosis in quarantinable, communicable, contagious and infectious diseases. Candidates will be rated on their education, experience, and personal qualification.

Laboratory apprentice, state department of health, salary, $720, men or women, preferred age from 18 to 30 years; requirements are a college education or its equivalent, and knowledge of bacteriology and practical laboratory experience is desirable.

Assistant physician, to provide eligibles for the position of assistant physicians in the state hospitals or other institutions of similar nature in various parts of the state. Salary in the state hospital, $1,200, increasing to $1,000, with maintenance, including quarters, board, laundry, etc. Applicants must be licensed medical practitioners of the state, men or women, and must have had six months' experience on the resident medical staff or as medical intern or clinical assistant in a state hospital or institution, or one year in the practice of medicine. Unmarried men preferred.

New York City

Drop in Influenza Cases.—The number of new cases of influenza reported to the board of health, February 14, was the lowest for any day this year, being ninety-five. The pneumonia cases reported continue to average between fifty and sixty daily.

Warns Against "Sleeping Sickness."—Dr. Royal S. Copeland, health commissioner, has issued a statement warning the public against a possible visitation of the disease known as "sleeping sickness." After describing the symptoms of the affection, he admonishes the public on the appearance of those symptoms immediately to summon a physician and to make a report to the board of health.

Hospital Asks Help.—The New York Hospital, for the first time since it was organized, 140 years ago, is making a public appeal for funds to meet a deficit of $100,000 incurred last year. In addition to its main institution in West Sixteenth Street it operates the Hudson Street Hospital and convalescent home and hospital at Bloomingdale. During the war it maintained a fully equipped hospital unit at Chateau Roux for eighteen months.

Hospital for Washington Heights.—At a mass meeting of Washington Heights physicians, held March 10, the Washington Heights Physician's League was organized. Its purpose is to secure a city hospital for this section, where urgent need for added facilities for sick has existed for a long time. The officers of the league are Dr. M. Joseph Mandelbaum, president; Dr. Henry G. MacAdam, vice president; Dr. Lesser B. Groeschel, secretary, and Dr. William F. Bender, treasurer.

Low Infant Death Rate.—Statistics recently issued by the health department show that in 1918 New York had the lowest death rate of babies of any of the ten largest cities of the United States, and the second lowest ever recorded in the history of the city. The lowest rate was recorded in 1917, when there were 88.8 deaths per thousand living births. The 1918 rate was 91.7. The health department considers the showing as extremely gratifying in view of the war with its resultant economic conditions and the influenza epidemic, which deprived many children of proper care and nourishment.

OHIO

Bill to Provide Sanatorium Districts.—A bill, introduced by Senator Davis of Youngstown, and now in the hands of the public health committee of the upper house, is designed especially to relieve unsanitary conditions due to pollution in sparsely populated regions, by the establishment of joint sanitary districts similar to the organization of the conservancy district authorized after the great flood in 1913.

Smallpox.—A year ago there were reported to have been 100 cases of smallpox in Middleton; at present there are only five, and none of them serious.——The board of health of Elyria, at a special session, February 27, to consider the epidemic of smallpox in the city, authorized the health officer, Dr. George E. French, to quarantine the Gates and St. Agnes' schools or any other school or factory, should the welfare of the city require such action.——At Denison, fifteen cases of smallpox were reported to have developed in six hours, and public gatherings have been suspended.

New Health Bill.—Representative Hughes has introduced a bill into the legislature to replace the local health administrative system of the state. Under the provisions of the bill each city of more than 25,000 inhabitants and each county is organized into a health district under a whole-time health officer. This will provide, for all sections of the state, public health directors equal to those now furnished in the largest cities. The bill has the backing of the state federation of labor, the state grange, the Ohio Manufacturer's Association, and other organizations, the governor and health and old age insurance commissions, and the state department of health.

Personal.—Dr. Henry Graefe, Lieut., M. C., U. S. Army, Sandusky, has returned after more than a year of service with the American Expeditionary Forces in France.——Dr. William C. Snodgrass for twenty-three years a practitioner of Kenton, has moved to Los Angeles.——A smoker was given at Columbus, February 29, in honor of Dr. Louis Kahn, retiring health officer of the city.——Dr. W. Clyde Leeper, Akron, has returned after several months' service with the American Red Cross tuberculosis units in Italy.——Matthias A. Wagner, Lieut., M. C., U. S. Army, Lima, who has been for several months on duty with Evacuation Hospital No. 25 in Belgium, has returned home.

The Biggar Prize Essay.—Through the generosity of Dr. Hamilton F. Biggar, Sr., the Cleveland Medical Library Association has instituted a prize essay competition, and this year offers three cash prizes, the total value of which amounts to $600. The competitions are open to men of the medical profession in Cuyahoga County, senior students of Western Reserve University, Cleveland, and interns in hospitals in Cuyahoga County. Prizes will be awarded to the best essay on some clinical subject. Manuscripts should be typewritten and submitted to the secretary of the Cleveland Medical Library Association on or before November 1. These manuscripts should be marked with a fictitious name and accompanied by a sealed envelop bearing this name and enclosing the true name of the essayist.

The Menace of Tuberculosis.—The state department of health announces that there are 50,000 patients suffering from tuberculosis in active stages, each of whom is a potential source of infection to his fellows. The state also lacks facilities for guarding the public against danger from these cases and means for giving treatment for incipient cases. The present hospital equipment for combating the disease consists of the state sanatorium, at Mount Vernon, for incipient cases, three county, two municipal hospitals, six intercounty districts hospitals and several private institutions which care for a limited number of patients. Most of these hospitals are filled to capacity and have extensive waiting lists. The department is encouraging the enlargement of existing hospitals and establishment of new ones, the employment of more public health nurses, and the establishment of county dispensaries.

Cincinnati

Staff Reappointed.—The entire medical staff of the Cincinnati General Hospital has been reappointed by the board of directors of the institution.

Society Changes Name.—The Cincinnati Research Society, March 6, changed its name to the Daniel Drake Society, the new name being in honor of the founder of the Cincinnati Hospital and Ohio Medical College, who died in 1853.

Personal.—Dr. Fred W. Lamb has resigned as assistant profess[illegible] in the University of Cincinnati and as [illegible] the staff of the Cincinnati General Hospital.——Dr. Henry E. Germann has been elected second vice president of the Cincinnati Antituberculosis Home.——Dr. James W. Miller has been appointed attending dermatologist to the Cincinnati General Hospital.

OKLAHOMA

Personal.—Dr. Oliver Bagby, Vinita, who has been seriously ill for a month in a hospital in Kansas City, is reported to be improving.

Physician Wins Verdict.—A jury in the district court of Beckham County awarded damages in the sum of $62,000 to Dr. G. Fowler Border, mayor of Mangum, in his suit for damages against five men who are said to have attempted to entrap Dr. Border into performing an illegal operation. Five of the men implicated in this conspiracy were tried and convicted in October, 1914, and sentenced to pay a fine of $500 and to be imprisoned for six months in jail. A new trial was immediately requested and refused, and notice of appeal was given.

PENNSYLVANIA

Philadelphia

Pennsylvania Unit Ready to Sail.—Members of the Pennsylvania Hospital unit have been sent to a port of embarkation in France and are awaiting transportation to America. There are about 400 members in the unit, including twenty-five doctors, 125 nurses and 250 enlisted men. During its service the unit was attached to the British army.

Pending Milk Bill Bad.—Dr. William Krusen of the department of health renewed the attack on the bill which is before the legislature to permit less butter fat in milk. This measure will allow milk dealers to reduce the quantity of fat from 3.25 to 3 per cent. and the milk solid from 12 per cent. to 11.5 per cent., such reduction to be accomplished by the addition of skim milk. The director urges the public to make a demonstration in the interest of the entire state, and especially of children, against such legislation.

Personal.—Joseph Sailer, Col., M. C., U. S. Army, and Benjamin F. Baer, Charles F. Nassau, and Albert P. Francine, Majors, M. C., U. S. Army, arrived in New York from France, February 26.——Drs. George F. Sowers, Charlotte S. Farrington, Benjamin Brown, Walter M. Miller and Frederick Van Gunten have been appointed additional school medical inspectors.——The following men have been awarded the military cross by the British government for bravery and distinguished service during the war: Thomas L. Doyle, A. Knox, Charles J. Worth and James B. Clinton, Lieutenants, M. C., U. S. Army.——John J. McKenna, Major, M. C., U. S. Army, after a year of service in the hospitals of France, has returned home.

CANADA

Toronto Institute for Blind Soldiers.—Dr. Charles R. Dickson, the roentgenologist, Toronto, himself blind, has been placed in charge of Pearson Hall, an institution recently opened in Toronto by Sir Arthur Pearson while in that city.

The Aesculapian Club, Toronto.—The following have been elected officers for 1919-1920: president, Dr. Herbert J. Hamilton; vice president, Dr. Nelson H. Beemer, Mimico, Ont.; secretary, Dr. Frederick C. Harrison, and treasurer, Dr. Edmund E. King.

Ontario Doctor Honored.—Dr. William Burt, Paris, Ont., a past president of the Ontario Medical Association, was presented with a substantial gift by friends in Paris, March 10, the occasion being his seventieth birthday. The presentation was made by the mayor of the town. Dr. Burt, who was ill at the time of this presentation, died, March 14.

Personal.—Major Benjamin L. Guyatt, Binbrooke, has been appointed officer commanding the Toronto military base hospital.——Capt. Roy H. Thomas, M. C., has returned to Toronto from overseas, and has been assigned to duty in Toronto military district.——Dr. William J. McCollum, Toronto, has returned from Florida much improved in health.——Lieut.-Col. Henry R. Casgrain, Windsor, Ont., has returned from overseas.

London University Seeks Aid for Medical Faculty.—The Ontario government received a deputation last week from the University of London, Ont. In the deputation were Dr. Edward A. Braithwaite, Edmonton, Alta., president of the university, and Dr. Hugh A. McCallum, London, Ont., dean of the medical department. They asked for $150,000 for extending the accommodation of the medical department. The citizens of London have already subscribed $100,000, and the site, costing about $22,000, has already been secured. The prime minister gave the deputation great encouragement, and stated that his government was already considering substantial aid both to London and Queen's University at Kingston.

GENERAL

Red Cross Nurse Fund.—The American Red Cross, March 9, announced an appropriation of $100,000 as a scholarship fund to induce graduate nurses released from the Army and Navy Nurse Corps to train for public health service.

Society for the Study of Epilepsy to Meet.—The next annual meeting of the National Association for the Study of Epilepsy will be held at the Craig Colony for Epileptics, Sonyea, N. Y., June 6-7, under the presidency of Dr. William T. Shanahan, Sonyea.

Bequests and Donations.—The following bequests and donations have recently been announced:

Grady Hospital, Atlanta, Ga., $500,000; Crippled Children's Home, Atlanta, $100,000; Atlanta Home for Incurables, $5,000, by the will of Albert D. Steiner, Atlanta.

Morton F. Plant Hospital, Clearwater, Fla., $1,000, the proceeds of a Washington's Birthday celebration at the Hotel Lake Belleview, Bellaire, Fla.

Episcopal Hospital, Philadelphia, a trust fund of $5,000 contingent on the death of the beneficiary, by the will of Ellen Craig.

After-War Activities of Red Cross.—The International Red Cross Committee at Geneva has called a convention of the Red Cross organizations of the world to meet at Geneva thirty days after the declaration of peace. This call was issued at the request of the Red Cross societies of the United States, France, Great Britain, Italy and Japan, whose representatives have constituted themselves a committee to formulate and propose an extended after-war program of activities in the interests of humanity.

Lethargic Encephalitis.—Reports of this disease are being made from an increasing number of places throughout the country. What was reported to be the first death from the disease occurred in New York, March 13. The patient was an adult 35 years of age. Forty cases were reported in the city of New York up to March 15. In Illinois, March 11, eighteen deaths had been reported to the state health department out of a total of twenty-seven cases, most of which were in Chicago. The disease had been reported, however, from Evanston, Springfield, Tallula, Alton and Marseilles. The first case reported in San Francisco, March 14, was that of a streetcar motorman. The disease has been made notifiable in a number of places.

Care of Insane Soldiers.—Under the regulations just announced from the Surgeon-General's Office, soldiers who are suffering from insanity will not be transferred to St. Elizabeth's Hospital, Washington, until it is demonstrated that they are incurable or require a long period of treatment. Insane subjects may be recommended for transfer to St. Elizabeth's Hospital after four months' observation and treatment in certain military hospitals designated for the reception of these cases. Exceptions are to be made in well defined cases of paresis, insane epileptics, or violent cases of insanity in which the prognosis is poor and the patient cannot be safely cared for in military hospitals. General Hospital No. 13, Dansville, N. Y., will receive only mild cases suitable for treatment in open wards. Many states have signified their willingness to receive, care for and maintain at state expense soldiers from their states who require institutional care, when the insanity existed prior to enlistment. No patients will be sent to any state institutions until assurance has been obtained from state authorities that the care of the patients is provided for.

Influenza and Pneumonia.—Reports throughout the United States indicate that influenza has markedly abated. Among the states especially reporting a decrease are Wisconsin, Indiana, Kentucky, Kansas and Illinois. At a few points, however, there have been slight decreases. The decrease is accompanied, of course, by a decrease in the number of pneumonia cases. Warnings are given by the local health authorities everywhere, however, not to relax precautions, and to remember that pneumonia sometimes follows an attack of influenza after a considerable interval. In Bozeman, Mont., March 7, there was a considerable rise in the number of influenza cases. On account of the city having no whole time health officer, a physician was brought in from Helena to take charge of the situation. The situation in the Army camps in the United States was reported, March 14, as satisfactory, there being a decided decline in the number of influenza and pneumonia cases, as noted in the report of the Surgeon-General. A considerable number of cases was reported among the troops in France. Illinois deaths from influenza and pneumonia during the epidemic amounted to about 100,000. As reported from North Carolina, the figures of the state board of health indicate that the precautions used against the spread of influenza had a tendency to decrease greatly the number of cases of whooping cough, measles, diphtheria and other contact diseases.

FOREIGN

Influenza.—Reports from Mexico during February were to the effect that 436,200 deaths had occurred from epidemic influenza during 1918. This was believed to be a conservative figure. The disease was still prevailing.

Typhus.—Press reports from Paris, March 10, were to the effect that there is a serious epidemic of typhus in Moscow, with many deaths. Disinfectants, medicines and soap are scarce. The shortage of fuel and scarcity of hot water make it difficult for the population to protect itself against the disease.

School of Herbalists at Parma.—The professor of materia medica at the University of Parma, Italy, has petitioned the government to found a school to train in practical knowledge of medicinal plants. One of the greatest difficulties in the cultivation of medicinal plants is the lack of knowledge concerning them and the inability to get practical expert advice on the recognition, growth and means of harvesting drug plants, those that grow naturally as well as those artificially cultivated. This it is hoped to remedy by the new training school which is to be in charge of Prof. A. Valenti, and connected with the school of pharmacy.

Paris Made Center for Red Cross Work in Europe.—In conformity with plans to carry out Red Cross postwar activities, the commission for Europe, established last November to consider and advise the war council in respect to all policies for the American Red Cross in European countries and to perform various other functions, has been abolished and the office of a commissioner for Europe has been created, and Mr. Robert E. Olds, one of the pioneers of the commission for France has been appointed commissioner with the assimilated rank of lieutenant-colonel, permanent headquarters to be maintained in Paris.

Allied Medical Aviation Congress.—The *Policlinico* relates that a representative gathering was held at Rome last month to discuss the medical and sanitary aspects of aviation. France was represented by Ambard, Guillain, Lemaire, and Garsaux; England by Henry Head, Dreyer, Flack and Birley; Belgium by Wonckin and Brohee; America by Boggs, Wilner and Rowntree, and Italy by Della Valle, Bressanin, Galeotti and Gradenigo, inspector of the psychophysiologic centers for aviation and the engineer Galanti. Others took part also, among them General Morris, director general of aeronautics. Resolutions dealing with physiologic and psychologic tests of candidates for licenses as pilots, the control of flights to high altitudes, and the use of oxygen by aviators were presented and will be sent to the peace conference with the request that they be taken into consideration when the international aerial code is drafted.

American Students at French Universities.—The *Paris Médical* of Feb. 8, 1919, states that arrangements have been made to distribute 5,000 American soldier students among the various departments of the University of Paris. The *Journal de Médecine de Bordeaux* also announces that 1,600 American soldier students are expected to arrive soon to enter the various courses of the University there, and in particular the courses of the Faculté de médecine. The mayor of Bordeaux has issued an appeal to the people of the city and suburbs to let him know of families which will take these young men into their homes and on what terms. The *Journal* adds "In informing our readers of this good news, we address to the American students, who have so valiantly accomplished their duty against the common foe, our best greeting and welcome. We are certain that they will find among our population and among their French university comrades the warmest reception."

Scientific Medicine and Pan-Americanism.—Dr. Paz Soldan of Lima, Peru, founder of the well known monthly, the *Reforma Medica,* in a recent number editorially comments on the importance of "solidarity between the professionals of the New World" as he expresses it. He continues, "In the North, the country of Wilson, after having spread over the red flood of Europe the rainbow of its unselfish abnegations, is turning its eyes toward the South and is commencing to take a serious interest in establishing closed and more sincere relations with its other sisters of America. The appearance of a great Spanish journal, designed originally in English, as will be the one to be published by the American Medical Association is a symptom revealing the profound spiritual change that characterizes the present hour. In Hispano-America the connection and personal relations between the physicians, the thinkers and the statesmen are growing every day deeper and more sincere. . . . To bind men and to bind countries together, that is the program for our future activity, that is the star which will guide our uncertain steps. We know well that in this task we will not be alone, but that hundreds of other medical journalists will march along with us, won over, like us, to the new American ideal, and all working together to realize it in a short time. The new year on which we have just entered, year of peace and life, ought to be as well the year of America, of Pan-America, united and strong by its spirit, by its intellectual originality, by its community of purpose, and by the inexorable mandate of its common destiny."

The Recent Decline of Plague in India.—India has been suffering intermittently for more than twenty years from plague, which has caused the death of some 10,000,000 people. There are now signs that the periodic epidemics are becoming less virulent, and for a curious reason: Experimental investigation has shown that the newer generations of rats are developing comparative immunity from plague infection. It is thought that in time the rats in long-infected areas may become completely plague proof. This eventual outcome has been predicted by Dr. C. J. Martin, F.R.S., director of the Lister Institute, who organized the researches which demonstrated that the infection is conveyed to man by rat fleas. Perhaps in some similar manner plague disappeared in the British Isles. British rats may gradually have become immune to plague infection. However, it must be remembered that plague remained persistently endemic through the centuries in certain quarters of the world, such as the highlands of Yunnan in China and of Asir in Western Arabia, and India has always been regarded as a reservoir.

Conflict Between Profession and Government in Tasmania.—The Tasmanian Branch of the British Medical Association has on several occasions protested against the abuse of the hospitals, and in February, 1917, passed a resolution that well-to-do patients should not be admitted into state-aided hospitals. The association decided that unless the assurance was given by the premier, that such abuse shall cease, to instruct all its members to resign forthwith from the honorary staffs of such hospitals. As the assurance was not given, the honorary medical officers at the hospitals resigned. A conference was held between the premier and delegates of the branch, but proved futile. To fill the vacancies in the Hobart hospital, five physicians were appointed at salaries in defiance of resolutions of the Tasmanian Branch of the British Medical Association, as well as of the Australasian medical congress. Much bitter feeling was aroused by politicians and the press, the attempt being made to show that the medical profession had jeopardized the welfare of the sick poor. In October, 1917, the chief secretary introduced a new hospitals bill in accordance with the policy of the government that there should be no differentiation between persons seeking medical relief in a state-aided hospital. The bill passed through three stages in the lower house and was then sent to the legislative council. All endeavors to come to terms with the profession failed, and in June, 1918, the premier announced his intention to amend the medical act with the object of enlarging the field from which the medical profession in Tasmania might be recruited. Attempts were made to come to terms, but retention of the five physicians who had defied the resolutions of the profession proved insuperable obstacles. A conference was proposed between the government and the Tasmanian Branch of the British Medical Association, but the latter insisted on the removal of the five physicians as a preliminary step. This was refused and so the impasse continues.

MEXICO LETTER

MEXICO CITY, March 9, 1919.

Ratification of Credits

The Universidad Nacional has decreed that persons who have taken courses in other state institutions or in other lands must have their credits ratified before they can follow the courses at the university. When students are sent out of the country on a traveling scholarship by their own university, the credits obtained will be accepted as valid, as also those of persons who have degrees from foreign professional schools if they have rendered services to the government during the last six years. They are entitled to practice their profession if they will merely have their respective diplomas revalidated, ratified, provided that this is done before December, 1920, and that they can present satisfactory documents to prove the services rendered.

Spanish Scholarships for American Students

According to cable despatches, the professor of sociology at the University of Madrid has petitioned the Spanish government to open the universities of Spain to the youth of Latin America, allowing them access to the various faculties, the archives and especially those of the Indies which are preserved at Seville. According to the plan proposed, several scholarships would be founded, providing a minimal allowance of 3,000 pesetas annually, which would be conferred on suitable pupils in the schools established in Latin America.

English in the Daily Papers

There is no paper published here in English, but two of the dailies to remedy this defect have now introduced a section entitled "Anglo-American Notes." The section in the *Universal* is edited by A. Grandville Patton.

Personal

Dr. T. G. Perrín has been elected to membership in the scientific society, the "Antonio Alzate."——Dr. R. Silva has returned from a trip to the United States.——Dr. N. R. Amerena, of the medical school at San Luis Potosi, has recently been appointed professor of medical pathology at the Escuela Nacional de Medicina in this city.

LONDON LETTER

LONDON, Feb. 26, 1919.

The Influenza Epidemic

The third wave of the influenza epidemic continues. In the interval since the second wave the smallest number of deaths from influenza in London in any week was thirty-three in the week ending January 25. In the two following weeks the number rose from fifty-eight to 100 and then to 273, a number which has not been exceeded since December 14. The disease is prevalent all over the country. In Durham all the elementary schools have been closed for three weeks, and whole families are stricken. In Leeds all the elementary schools and the Sunday schools have been closed. In Edinburgh 316 deaths occurred, being the rate of 48.6 per thousand, the highest figure ever recorded, although the week before last an identical number was recorded. This high mortality was largely due to influenza. As preventive measures, gargling the throat and washing the nostrils with a solution of common salt and potassium permanganate is recommended by the health authorities. Masks have been discussed in the press, but so far have not been adopted. Sir Arthur Newsholme, chief medical officer of the Local Government Board, advises them for nurses in cases of pneumonia complicating influenza. In New South Wales their use has been made compulsory, and church services in Melbourne are allowed only on condition that every worshiper wear a mask.

Seven Diseases Made Notifiable

The return home from the various seats of war of large numbers of soldiers suffering from infectious diseases is a source of danger to the civilian population that has exercised the health authorities. An order has therefore been published making malaria, dysentery, trench fever, acute primary pneumonia, enteric fever, relapsing fever and typhus fever notifiable as epidemic and infectious diseases. It is explained that the expression "dysentery" includes amebic and bacillary dysentery, and the expression "enteric fever" includes typhoid and paratyphoid fevers. Every physician, as soon as he becomes aware that a person on whom he is in attendance is suffering from any of the complaints in question, must send to the health officer for the district a notification of the case, unless he knows that it has been reported from another source within the preceding six months. The health officer will immediately take steps to investigate the source of infection and to prevent it spreading. In the case of trench fever or of malaria, in which he has reason to believe that infection was contracted in the United Kingdom, he must forward the name and address of the patient to the Local Government Board, and the same procedure must be adopted if there is an outbreak of dysentery in his district. In every case of malaria, trench fever or dysentery, the health officer will take the necessary steps to secure treatment of the case in a suitable hospital unless he is satisfied that treatment elsewhere will be carried out with all precautions necessary to prevent the spread of the disease. In every case of malaria the health officer will see that if necessary the patient is supplied with efficient mosquito netting, and receives necessary quinin treatment and proper advice as to the continuation of the treatment in order to prevent relapses. If two or more cases occur in a district, a physician may be appointed to make systematic visits to the houses to examine persons who may be infected. In any case, when dysentery occurs the health officer may require that the person shall discontinue any occupation connected with the preparation or handling of food or drink for human consumption. Children in charge of any person specified must not be sent to school. In cases of trench fever the health officer may require that steps immediately be taken to obtain the complete destruction of the lice on the person and clothing of every occupant of the building, and the temporary segregation of other inmates of the building, or persons recently in contact with the patient, until their persons and clothing have been completely freed from lice.

Birth Rate and Empire

The National Birth Rate Commission is investigating the problem of the declining birth rate as it affects the empire, the contemporary movements of population in the dominions, and the proportional distribution of the sexes throughout the empire. It has recommended a complete census shortly after the war and the establishment of a permanent anthropometric department in the ministry of health, a complete constitution for which ministry the national council will issue almost immediately which will show how it may be made an instrument of reconstruction. J. M. Robertson, M. P., submitted to the commission a supplementary statement on the Australian birth rate. The Australian rate, which in 1890 stood at 35, having fluctuated only slightly from 35.3 in 1881, began steadily to decline till, in 1896, it had gone below the British rate. The latter, however, went on steadily declining till 1914, whereas the Australian rate slightly recovered in 1904 and remained steady till 1910, when it began rising, till in 1912 it stood at 28.7; a slight fall then again appeared, till in 1914 it stood at 28.1, while the English was 24. The whole Australian figures, while marked by a slow recovery from the lowest in 1903 (25.3); show no further tendency to rise since 1912, and still mark Australia as a country with an obviously restricted birth rate. The commission is to devote a number of sittings to the problems of the food supply of this country and the optimum population that it can healthily maintain.

The Clinical Meeting of the British Medical Association

The special meeting of the British Medical Association in London was announced in a previous letter. The meeting will be held from April 8 to 11 at the Imperial College of Science, South Kensington. Compared with the ordinary meetings, it will be much curtailed. There will be only three sections, and most of the subjects will be connected with the war. Papers and discussions will occupy from 10 a. m. to 1 p. m., and demonstrations will be given at the hospitals in the afternoons. In the Section of Medicine, Lieut.-Col. F. W. Mott will open a discussion on war neuroses, April 9. April 10 (in conjunction with the Sections of Preventive Medicine and Pathology) influenza will be discussed. The recent epidemics in England and France will be compared. April 11, under the chairmanship of Sir William Osler, venereal disease will be introduced by Brevet-Col. L. W. Harrison. Prognosis in cardiovascular affections will be introduced by Dr. Thomas Lewis under the chairmanship of Sir James Mackenzie. Demonstrations will be given as follows: neurologic cases, National Hospital for Paralyzed and Epileptic, Queen Square; disease of the chest, Brompton Hospital; mine gas poisoning, Lieut.-Col. D. Dale Logan; newer methods in cardiodiagnosis, National Heart Hospital; air force tests, cases and specimens (cardiac), Dr. Thomas Lewis, University College Hospital; venereal diseases, Lieut.-Col. L. W. Harrison, Military Hospital, Rochester Row; war neuroses, Lieut.-Col. F. W. Mott, Maudsley Clearing Hospital, and diseases of children, Hospital for Sick Children, Great Ormond Street.

In the Section of Surgery the subjects will be: gunshot wounds of the chest, introduced by Col. T. R. Elliot and Col. G. E. Gask; wound shock, introduced by Prof. W. M. Bayliss and Dr. H. H. Dale, and reconstructive surgery, introduced by Major R. C. Elmslie. Demonstrations will be given as follows: orthopedic methods, at the Military (Orthopedic) Hospital, Shepherd's Bush; specimens illustrating wounds of arteries, at the Royal College of Surgeons; roentgen ray and facial injuries, at Sidcup; injuries of the eye, and specimens illustrating fractures of the skull, at the Royal College of Surgeons, and specimens illustrating gunshot wounds of the abdomen, at the Royal College of Surgeons.

In the Section of Preventive Medicine and Pathology, the dysenteries will be introduced by Lieut.-Col. L. Dudgeon. Malaria will also be discussed.

The remarkable war collection at the Royal College of Surgeons, which was described in a previous letter, will be on view daily, and three demonstrations have been provided: Sir George Makins, injuries of arteries; Prof. Arthur Keith, fractures of the skull, and C. S. Wallace, abdominal injuries.

Reform of the Indian Medical Service

In response to a deputation from the British Medical Association, Right Hon. E. S. Montagu, secretary of state for India, has announced certain reforms: The pay is to be increased by 33⅓ per cent. Opportunities will be given to medical officers to engage in research, and leave will be granted for the purpose of study. Facilities will be given for private practice, but this must be under the control of the government.

Physiology and the Food Problem

In a lecture at King's College, Prof. W. D. Halliburton, F.R.S., described some interesting researches made during the war by the food war committee of the Royal Society. About the middle of 1917, the fat shortage became serious, so much fat was used in the manufacture of explosives. The question arose as to whether the fatty acids remaining after the extraction of glycerin from fat could be used for the purposes for which fats had been previously used. The first experiments were made on rats. These animals are comparatively short-lived, and if fed on a particular diet for a few weeks or months it is equivalent to feeding a long-lived animal, such as a man, over a longer period. On a diet of fatty acids the rats thrived and multiplied, and it remained to try the effect of the food on man. Prof. Noël Paton obtained voluntary assistants for the test, and the experiment proved a complete success. There is as yet no need for a diet of this kind, but in case of emergency a source of a supply for fat is here indicated. A curious fact came out in these experiments: it was found that if an animal was fed on fatty acids, they passed into the blood stream as fat, the animal making its own glycerin, possibly sugar. Another investigation was made on lanolin. The government had some thousands of tons in stock, and information was asked for as to whether this could be used for food. It has an entirely different chemical constitution from fat. It is not poisonous, but it proved to be quite useless for food on account of its nondigestibility.

National Health

Sir Arthur Newsholme, medical officer of the Local Government Board, who is about to retire, gives in his last report a general survey of the improvement in the national health in recent years. A comparison of the death rate at different ages in the period 1911-1915 with that of 1871-1880 shows that at all ages up to 45 there has been a reduction in the death rate from all causes of from 42 to 50 per cent. in England and Wales. An increase in the average expectation of human life of ten years for males and eleven for females is also a notable fact of the progress that has been made during this period. Of the annual saving of 234,955 lives, represented in the returns showing improvement in health, 64 per cent. is ascribable to reduced mortality from acute and chronic infectious diseases, including the ordinary infectious diseases, as tuberculosis and respiratory affections. Perhaps the best index of combined social and sanitary progress is the reduced death rate in young children, which shows a substantial national gain in child life. The almost complete disappearance of typhus fever, and the gradual vanishing of typhoid, can fairly be regarded as due to public health administration during the past forty years. In Sir Arthur Newsholme's opinion the needs of the future might be considered as coming chiefly under the heads of: (1) more extensive research into the causation of disease; (2) extensions of communal action for prevention and treatment; (3) more complete medical training for the work, and (4) the simplification and strengthening of administrative machinery.

PARIS LETTER

Paris, Feb. 20, 1919.

Electric Treatment of Muscular Atrophy

War wounds and conditions entailed by them are the cause of so many instances of muscular insufficiency that it may be said that hardly a single wounded soldier has escaped without having some of his muscles or muscle groups affected unfavorably. At the last meeting of the Académie des sciences, Dr. J. Bergonié, professor of biologic physics and medical electricity in the Bordeaux medical faculty, stated that industrial or, still better, agricultural work, done day in and day out, would be efficacious, but that this is not always possible, for personal reasons, or because of wounds sustained, season, etc. He advocates for the purpose a method of intense rhythmic faradization which would help to overcome these difficulties. He aims to produce a very pure induction wave by means of a *trembleur* or a special machine, with frequency just sufficient to tetanize the muscle, and by makng use of very large electrodes, an energetic rhythmic functioning of the muscle is thus realized, without provoking any sensation of nervous or muscular fatigue. This passive electrical muscle exercise brings about, without voluntary participation of the will of the patient, an intense assimilation of nutrition and more rapid muscular development than would be produced by voluntary exercise, so much so that the power of motion is quickly restored and the general condition of the patient is improved rapidly, favoring an early recovery.

Provisioning Paris

In order to combat the high cost of living in Paris, which is increasing day by day, M. Vilgrain, undersecretary of state for the food commission, has conceived a project for supplying foods and prime necessities of life for the city of Paris. Barracks will be constructed in all the arrondissements of Paris, at least four in the less populated districts and six or eight in the others. In these barracks one may purchase rice, dry vegetables, concentrated milk, ham, salt meats, frozen meats, pies and edible fats, etc., at a price very much lower than that asked by the retail merchants. These barracks, which will be practically municipal markets, will be supplied abundantly with food by the food commission from the large stocks purchased to provision the army and which are becoming every day more easily obtainable for civilian use because of the demobilization of the army. These municipal stores will not have an exclusive monopoly on the sale of foods furnished by the food commissioner. Merchants, generally, can obtain them if they will agree to sell them at a price fixed by the commission. It is probable that 120 of these barracks will be opened soon. As the merchandise will be sold by eighty municipal butcher shops and 300 controlled groceries, the population of Paris will be able to buy food in about 500 stores at a rigorously controlled price, one which will be lowered every fifteen days. On the other hand, M. Victor Boret, minister of agriculture and food commissioner, has promised to deliver to the city of Paris, from now on, 200 additional tons of refrigerated meats per day. This meat will be placed on sale by the controlled meat markets. This additional supply represents two fifths of the total meat consumption of the people of Paris.

Importance of Proper Selection and Distribution of Cases for War Surgery

Dr. Quénu, professor of clinical surgery in the Paris Medical Faculty, recently directed the attention of the Société de chirurgie de Paris to the fact that in war surgery good final results depend in large part on the proper sorting and distribution of cases. He regards the methods employed in the III-e Armée as being ideal in that respect. The detached division ambulances, formerly charged with the selection of the cases as the wounded arrived from the first aid posts, finally turned over this part of their work to a special service which has a sufficient personnel and surgical material. This body exercises a triple function: (1) a selective rôle; (2) operating and hospitalizing; (3) evacuation. The moderately and the severely wounded who can be transported are sent to the appropriate center in the rear or on the side lines after the necessary provisional fracture apparatus has been applied. The nontransportable wounded are operated on, such as cases of abdominal wounds, hemorrhagic cases, certain cases of thorax wounds, and cases of extensive wounds of the extremities, if the condition of the patient permits of intervention. Patients with tourniquets are held. The slightly wounded are sorted out and are sent to special points of embarkation. The matter is still further complicated by the large number of the gassed and of those having sustained a joint resection or an amputation. These patients must be sifted out and sent to special centers.

The services of this *triage* group are not necessarily rendered at only one point. The primary selection of the slightly wounded from the others is always of great importance, and it is important to do this work as soon as possible, because these slightly wounded and slightly crippled encumber the means of transportation, to the detriment of the more severely wounded. It was even arranged to have special points of embarkation for the resection cases. This leaves at the *centre de triage* only the nontransportable, who are retained, while all the others are evacuated. Here again, a distinction has to be made between the severely wounded who are transportable only to the neighboring surgical centers, and the less severely wounded, who, because of the nature or site of the wound, are not only transportable but can be sent to hospitals farther along the lines of communication, provided always, that as they have not been operated on at the front, the operation can be done inside of twenty, twenty-four or twenty-six hours after the wound. There are, thus, three zones of operations: (1) the first or primary zone at the *centre de triage,* the sorting center of the corps d'armée; (2) the secondary zone comprising the surgical centers in the vicinity of the former; (3) the territorial zone (zone des étapes or zone de l'intérieur) the distance of which should be measured by hours of transport rather than by kilometers.

By whom should the *triage* be made? Without doubt by the consulting surgeon of the corps d'armée, who need not be a good operator. He must, however, be a good organizer, energetic, prompt in decision and capable of meeting any emergency which may arise so far as his corps d'armée is concerned, being able to adapt his work to an advance or withdrawal. As for the technical *liaison* or cooperation between the various corps d'armée, this will naturally fall also on the shoulders of the surgical consultant who should possess all the qualities of mind mentioned above.

Sequels of Gassing in Warfare

At the last meeting of the Académie de médecine, Dr. Ch. Achard, professor of pathology and general threapeutics in the Paris medical faculty, spoke of the sequels of gas poisoning. He based his conclusions on the examination of 3,525 cases seen in the course of two years, 84 per cent. of which were caused by gas of the mustard gas type, and 16 per cent. by suffocating gas. It is remarkable that in the latter cases the most serious sequels are seen. The most important of these late symptoms (they may appear as late as forty months after the gassing) are manifested by the lungs. They are emphysema and chronic bronchitis mainly, but a condition simulating tuberculosis (slight hemoptysis, auscultatory signs at the apexes, fever, loss of weight) or without tubercle bacilli in the sputum. Nevertheless, tuberculosis may supervene as a secondary complication, but much less frequently than is believed to be the case, and only as a lighting up of an old focus. In addition to these pulmonary lesions, there may be lesions of the larynx, eyes, skin, stomach, heart and, exceptionally, of the liver and kidneys. Nervous disorders may develop or disturbances of the general health of the gassed person.

Marriages

John Z. Mraz, Capt., M. C., U. S. Army, Oklahoma City, at present commanding a field hospital in France, to Miss Elizabeth Isabel May, Army Nurse Corps, at Fort Worth, Texas, in June, 1918.

Morris Abel Slocum, Lieut., M. C., U. S. Army, Pittsburgh, to Mlle. Clemantine Marie Louise Mistiaen of Antwerp, Belgium, in London, England, March 1.

Frederick George Speidel, P. A. Surg., Lieut., U. S. Navy, Louisville, Ky., to Miss Teresa Anne Henry of Washington, D. C., February 26.

Deaths

Richard Brooke Maury, Memphis, Tenn.; University of Virginia, Charlottesville, 1857; Bellevue Hospital Medical College, 1858; aged 85; a member of the Tennessee State Medical Association; for four years a surgeon in the Confederate Service during the Civil War; professor of theory and practice of medicine in Memphis Medical College from 1869 to 1872, and of gynecology in the Memphis Hospital Medical College from 1895 to 1897; president of the American Gynecological Society in 1906; and once president of the board of education of Memphis; president of the City Club of Memphis from 1907 to 1911; died at his home, March 17.

Robert Boyden Underwood ⊕ **Capt., M. C., U. S. Army,** Memphis, Tenn.; University of Nebraska, Omaha, 1904; aged 38; instructor in the University of Tennessee; district surgeon of the Illinois Central, and Yazoo and Mississippi Valley railroads; formerly captain in the medical department of the National Guard of Tennessee; commanding officer of the 118th Field Hospital, 105th Sanitary Train, 13th Division, and also in charge of the advanced dressing station; died in the American Red Cross Hospital, Rouen, France, November 12, from pneumonia.

Edgar L. Griffin, Atlanta, Ga.; Southern Medical College, Atlanta, Ga., 1894; aged 47; a member of the Medical Association of Georgia; formerly professor of abdominal and gynecological surgery in the Southern College of Medicine and Surgery, Atlanta; a veteran of the Spanish-American War, in which he served as medical officer; for many years a member of the visiting staff of the Grady Hospital; who was injured in a collision between automobiles, March 2; died a few hours later at the Grady Hospital.

Haroutyoun Tiryakian, New York City; University of Paris, 1874; aged 74; at one time president of the Armenian Political Chamber at Constantinople, and a leader in the Armenian nationalization movement; who made his escape to Persia in 1896, and for nine years was physician to the Shah; a resident of New York for twelve years; died in the Manhattan Square Sanitarium, March 2, after an operation.

Charles Gilchrist Briggs, Schenectady, N. Y.; Albany (N. Y.) Medical College, 1889; aged 53; a member of the Medical Society of the State of New York; who joined the American Volunteer Ambulance Corps in June, 1916, serving first with the British and then with the French army, and who was awarded the Croix de Guerre for removing French wounded under fire at Verdun; died at his home, March 2.

Walter Henry Fox ⊕ **Capt., M. C., U. S. Army,** Waucoma, Iowa; State University of Iowa, Iowa City, 1905; aged 36; assistant professor of anatomy in his alma mater; who was on duty with Base Hospital No. 85 in Paris until January 18, when he was transferred to the Balkan Commission and sent to Belgrade, Serbia; died in Serbia, February 22, from septic pneumonia.

Willis Benjamin Harrison ⊕ **Lieut., M. C., U. S. Army,** Buffalo; University of Buffalo, N. Y., 1916; aged 27; who entered the Army on Oct. 23, 1918, and was ordered to Camp Greenleaf, Ga.; was honorably discharged, December 29, and was recommissioned in the Medical Reserve Corps on the same date; died at Silver Creek, N. Y., February 4, from pneumonia.

Harry Hibberd Weist ⊕ New York City; Bellevue Hospital Medical College, 1891; aged 50; formerly a member of the staff of the Reed Memorial Hospital and St. Stephen's Hospital, Richmond, and surgeon of the Grand Rapids and Indiana Railroad; died at his home, March 6, as the result of a bullet wound, believed to have been self-inflicted.

Robert B. Jessup, Vincennes, Ind.; Bellevue Hospital Medical College, 1883; aged 62; who had been under treatment for several months in Cincinnati on account of disease of the eye; died in his room in the Hotel Emery, Cincinnati, March 4, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent.

Solomon C. Page, Visalia, Calif.; College of Physicians and Surgeons, St. Joseph, Mo., 1880; University of Louisville, Ky., 1887; aged 73; for many years a practitioner of Atchison County, Kan.; but since 1895 a resident of California; died at his home, February 26, from pleuropneumonia.

Herman Bennett, New Lexington, Ohio; Eclectic Medical Institute, Cincinnati, 1896; aged 46; a member of the Ohio State Medical Association; while driving in his automobile over a grade crossing of the Toledo and Ohio Central Railroad in New Lexington, March 3, was struck by a train and instantly killed.

Andrew S. Dickey ⊕ Tipton, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1881; aged 68; local surgeon to the Lake Erie and Western Railroad and to the Northern Indiana Traction Company; health officer of Tipton County; died at his home, March 2, from angina pectoris.

Charles Thomas Mason, Clear Spring, Md.; Jefferson Medical College, 1896; aged 53; died at his home, March 5, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while irresponsible on account of a nervous breakdown.

Max Staller ⊕ Philadelphia; University of Illinois, Chicago, 1895; aged 51; one of the founders and first president of Mount Sinai Hospital, Philadelphia; medical director of the Jewish Consumptive Institute; died at his home, March 2, from carcinoma of the throat.

John G. Hersh ⊕ East Greenville, Pa.; University of Pennsylvania, Philadelphia, 1876; aged 66; a member of the state house of representatives in 1899; a specialist in diseases of the eye, ear, nose and throat; died at his home, February 23, from bronchial pneumonia.

Francis Rand Blanchard ⊕ Eaton Rapids, Mich.; University of Michigan, Ann Arbor, 1891; aged 55; chairman of the local chapter of the American Red Cross; was killed, March 4, by a fall down the elevator shaft of the Harriett Chapman Hospital, Eaton Rapids.

Henry Arthur Greiner, Fremont, Wis.; Detroit College of Medicine and Surgery, 1895; aged 45; formerly a member of the State Medical Society of Wisconsin; died in the Theda Clark Hospital, Neenah, Wis., March 5, from tuberculosis of the intestines.

Claude Albert White, Memphis, Tenn.; Atlanta (Ga.) Medical College, 1880; aged 62; at one time a member of the Medical Association of Georgia; died at St. Joseph's Hospital, Memphis, February 20, from septicemia, due to an infected toe.

Darrell Jefferson Herron, Madrid, Ala.; Atlanta (Ga.) Medical College, 1884; aged 72; at one time a member of the Medical Association of the State of Alabama; died at the home of his daughter in Columbus, Ga., February 24, from pneumonia.

Hugh Frank Taylor ⊕ **Capt., M. C., U. S. Army,** Mintonville, Ky.; Kentucky School of Medicine, Louisville, 1893; aged 48; on duty at Camp Mills, N. Y.; died in the base hospital at that camp, December 18, from chronic diffuse nephritis.

Frank Wells ⊕ Boston; Harvard Medical School, 1868; aged 76; professor of histology in the College of Physicians and Surgeons, Boston; medical director of the John Hancock Mutual Life Insurance Company; died at his home, March 4.

Samuel Harold Boyd ⊕ **Lieut., M. C., U. S. Army,** Philadelphia; University of Pennsylvania, Philadelphia, 1913; aged 30; on duty at Camp Merritt, N. J.; died in the base hospital, Camp Merritt, December 24, from valvular heart disease.

Sylvester J. Hill, Fargo, N. D.; Homeopathic Hospital College, Cleveland, 1872; aged 72; a veteran of the Civil War, and department commander of the North Dakota Grand Army of the Republic in 1907; died at his home, March 1.

Bromwell Artemus Andrew, Jersey City, N. J.; Bellevue Hospital Medical College, 1869; aged 71; for several years surgeon of the Jersey City Police Department; died suddenly in his office, February 27, from heart disease.

Frank Underwood, Poplar, Mont.; University of Illinois, Chicago, 1905; aged 40; also a druggist; died at his home, February 27, from valvular heart disease.

Benjamin F. Carpenter, Belton, S. C.; University of Maryland, Baltimore, 1899; aged 40; died at his home, February 15, from pneumonia following influenza.

Henry Wilson, Newburgh, N. Y.; L.R.C.P. (Lond.) and L.R.C.S. (Eng.), 1879; aged 54; city manager of Newburgh; died at his home, February 26.

William Gibson Lumley, Detroit; University of the Victoria College, Coburg, Ont., 1870; aged 74; died at his home, February 24.

Richard Henry Sims, Powellton, Va.; Jefferson Medical College, 1867; aged 76; died at his home, February 21.

James Valentine Kern, New York City; Cornell University, New York City, 1902; died at his home, February 23.

⊕ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

MISBRANDED NOSTRUMS

Chase's "Blood and Nerve Tablets," "Liver Tablets," and "Kidney Tablets."—Shipped in August, 1916, by K. E. Hafer,[1] trading as the Dr. Chase Co., Philadelphia. Analysis showed the "Blood and Nerve Tablets" to contain essentially, metallic iron, ferrous sulphate, sodium carbonate (washing soda), zinc phosphid, capsicum (red pepper), aloes, strychnin, and possibly gentian and podophyllum, with a trace of arsenic. The "Liver Tablets" were more than half sugar the active portion consisting of aloes, capsicum, licorice, ginger, and what appeared to be nux vomica. The "Kidney Tablets" were about 40 per cent. sugar, the active ingredients appearing to be methylene blue, licorice, and vegetable matter. The "Blood and Nerve Tablets" were falsely and fraudulently represented as a cure for weakness, nervous prostration, sexual exhaustion, anemia, etc. The "Liver Tablets" were falsely and fraudulently represented as a cure for paralysis of the bowels, diseases of the liver, dyspepsia, malaria, etc. The "Kidney Tablets" were falsely and fraudulently represented as a cure for paralysis of the bladder, general debility, rheumatism, Bright's disease in its early stages, dropsy, etc. Fine, $250.—[*Notice of Judgment No. 6170.*]

XXX Tonic Pills.—Shipped about January, 1917, by the XXX Pill Co., Lewiston, Me. Analysis showed the pills to contain a small amount of iron, a trace of quinin, strychnin, and resins, with emodin, aloin, gentian, anise oil, and vegetable extractives. Falsely and fraudulently represented as an effective treatment for diseases of women, sciatica, locomotor ataxia, St. Vitus' dance, paralysis, diphtheria, impotence, spermatorrhea, whooping cough, etc. Fine, $50.—[*Notice of Judgment No. 6189.*]

Egiuterro, Uicure, Sweet Rest for Children, Beaver Drops Comp., Blood Kleen, Heart and Nerve Regulator, Kidneyleine, Eye Powder, Tanrue Herbs and Pills, and 5 Herbs.—Shipped about June, 1916, by Albert G. Groblewski, Plymouth, Pa. Analysis showed "Egiuterro" to consist essentially of aloes, Epsom salt, jalap, strychnin, alcohol and water, flavored with methyl salicylate. "Uicure" consisted of five bottles, lettered "A" to "E," inclusive. "A" contained nearly 20 per cent. of alcohol, with aloes, Epsom salt and menthol. "B" contained alcohol, ammonia, chloroform, ether, oil of sassafras, menthol, benzoic acid, cinnamic acid, resins, and an unidentified alkaloid. "C" was essentially a water-alcohol solution of quinin sulphate and red pepper. "D" was essentially a water-alcohol solution of morphin, gum guaiac, ammonia, ammonium carbonate, and essential oils. "E" consisted of tablets containing lithium, sodium carbonate, salicylates, and salol. "Sweet Rest for Children" contained opium, alcohol, asafetida, magnesium carbonate, sugar and water. "Beaver Drops Comp." was a resin dissolved in alcohol and water. "Blood Kleen" appeared to be essentially a syrup containing over 13 per cent. alcohol, about 5 per cent. potassium iodid, sarsaparilla, licorice, plant extractives, with a small quantity of arsenic. "Heart and Nerve Regulator" contained alcohol, morphin, chloral hydrate, sodium bromid, valerianic acid, red pepper, glycerin, sugar and water. "Kidneyleine" was a water-alcohol solution of the acetates and nitrates of potassium and ammonium, with aromatics and indications of spartein. It contained over 23 per cent. of alcohol. "Eye Powder" was essentially iodoform and boric acid. "Tanrue Herbs and Pills" contained tansy, rue, pennyroyal, hepatica, sassafras, ginger, cinnamon, verbena and podophyllum. The pills contained licorice with indications of aloes. "5 Herbs" contained mistletoe, stramonium, skullcap, and black cohosh. All of these products were falsely and fraudulently represented: "Egiuterro" as a preventive of smallpox, and as a remedy for rheumatism, dyspepsia, all stomach disorders, coughs, headaches, etc.; "Uicure" as a cure for rheumatism, pyemia, sciatica, gout, etc.; "Sweet Rest for Children" as a remedy for three-months' colic, fretful, cross and nervous babies; "Beaver Drops Comp." as a remedy for irregular menses, etc.; "Blood Kleen" as a treatment for syphilis, eczema, anemia, cancer and lockjaw; "Heart and Nerve Regulator" as a heart and nerve regulator, a perfect sedative for delirium tremens, St. Vitus' dance, sleeplessness and nervous headache; "Kidneyleine" as a remedy for Bright's disease and dropsy; "Eye Powder" as a remedy for cataract and sore eyes; "Tanrue Herbs and Pills" as a remedy for suppressed, painful and irregular menses and "5 Herbs" as a remedy for epilepsy and "fits." Fine, $210.—[*Notice of Judgment No. 6178.*]

HAVENS' WONDERFUL DISCOVERY

Report of the Council on Pharmacy and Chemistry

The following report has been authorized for publication by the Council. W. A. Puckner, Secretary.

E. C. Havens, Sioux Falls, S. D., requested an examination of a remedy which he asserts he discovered for the cure of influenza. The labels of the specimens submitted read:

> "Prof. E. C. Havens'
> *Wonderful Discovery*
> INFLUENZA PREVENTIVE
>
> "Directions—Take ½ teaspoonful in wine glass of water not over twice a day for one week, then repeat every alternity week.
>
> "This remedy is good for Coughs, Colds, Lung Diseases, LaGrippe, Influenza, Rheumatism; good for Pains, Cramps, Backache, Lumbago, Neuralgia; for severe pains soak your feet in hot water for 3 nights, add 3 tablespoons of baking soda in water and apply Anti-Flue Medicine to the affected parts.
>
> "This is manufactured and sold by Prof. E. C. Havens, formerly of New York, branch office now located Main Ave. and 10th St., Sioux Falls, S. D. Official Rules of the Council on pharmacy and chemistry of the American Medical Association shall be complied with."

In response to a statement asking for the composition of the "remedy" and for evidence for the claimed curative virtues, Mr. Havens sent the following "formula" and testimonials:

Havens' Rheumatic Remedy

Oil Wintergreen	2 drams
Oil Sassafras	2 drams
Oil Black Pepper	2 drams
Spts. Camphor	1 dram
Spts. Turpentine	2 drams
Spts. Chloroform	1 dram
Tr. Arnica	1 dram
Tr. Opium (out)	1 dram
Alcohol	8 ounces

The following is typical of the testimonials:

> "Prof. Havens' Discovery for the cure of Influenza has, to my personal knowledge, done wonders for those who have used it. I personally know of several very severe cases which it has cured and of many cases which have been prevented by its use. I am taking the medicine as a preventative and can honestly say that I am glad of the opportunity of securing it.
>
> "I think the people should know more about this discovery during these times."

When inquiry was made if the formula for "Havens' Rheumatic Remedy" represented the composition of "Prof. E. C. Havens' Wonderful Discovery," and if the word "out" written after tincture of opium meant that this ingredient was not now a constituent of the preparation, Mr. Havens wrote:

> "In response to your letter of the 30th ult., beg to state that the Opium is not necessarily an ingredient in the compounding of this remedy, as it is difficult to obtain and I have eliminated its use.
>
> "This formula for Havens' Rheumatic Remedy is the same formula as is used in Prof. E. C. Havens' Wonderful Discovery. I discovered the virtues of the remedy in the treatment of Influenza by practical experience and hence the name 'Discovery.'"

The Council finds that E. C. Havens' Wonderful Discovery is an unscientific, irrational mixture, marketed under therapeutic claims which are unwarranted and without foundation. As the preparation is irrational and unscientific, the promise "Official Rules of the Council on Pharmacy and Chemistry of the American Medical Association shall be complied with" is obviously false.

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[1] Hafer's fraudulent business was described in The Journal, May 25, 1918, and the matter is reprinted in the pamphlet "Medical Mail-Order Frauds," price 20 cents.

Correspondence

"GREEK ROOTS AND ENGLISH WORD FORMATION"

To the Editor:—Because errors are found in the Illustrated Medical Dictionary is no reason why the classical editor of The Journal of the American Medical Association should not be a purist. In the case of βρῶμα this lapse is peculiarly regrettable by reason of the use of this work in compounds referring to bromin, although the a comes from the second part of the compound, such as bromacetic, bromal, bromamide, bromalin, bromate and bromargyrite, all common terms in medicine. Webster's new unabridged, it is true, gives the word "bromatoxism," but calls attention to the fact that it is irregular. It gives also the regular forms of the compounds from βρῶμα (food), such as bromatography, bromatology and bromatologist. I beg to express the hope that in generous treatment of hybrid words our editor will not admit paesiatrics or pousphyllum.

H. W. Wiley, M.D., Washington, D. C.

[Comment.—We were at first slightly nettled to have such monstrosities as paesiatrics (pediatrics) and pousphyllum (podophyllum) thrust on us, by way of comparison, for we did not think the enormity of our own offense nearly so great. Where is the *locus classicus* for these monsters? Nor did we quite understand why they should be termed "hybrids," unless the good doctor would thereby indicate that in word formation, as well as in other forms of production, juxtaposition does not suffice—that there must be a coalescent union. Aside from this interpretation, we might state that by hybrid words one ordinarily designates such compounds as are formed from mixed elements, as from roots taken from two entirely distinct languages; for example, *Minneapolis*, the first part being Indian and the second part Greek; or *sub-way*, formed from a Latin and an English root.—Ed.]

"A NEW TREATMENT FOR THE MORPHIN HABIT"

To the Editor:—In his letter (The Journal, March 8, 1919, p. 747) discussing "A New Treatment for the Morphin Habit," Dr. Hugh McGuigan seems to be propounding the theory that there can be no immunity or tolerance unless Ehrlich's side-chain hypothesis is satisfied.

If laboratory men can demonstrate antibodies only with proteins, then they must admit the limitations of laboratory methods and not assail clinical facts. These facts are that immunity or tolerance can be established to nonprotein substances, and that human beings can take increasing amounts of alcohol, arsenic, atropin, cocain, morphin, etc. In the case of morphin, the new-born child of a morphinist mother shows tolerance, and may die if morphin is not administered.

But perhaps Dr. McGuigan has merely misunderstood my terminology when I wrote of immunity and antibodies. I used the terms in the broadest sense, and was not obsessed by any fixed ideas about Ehrlich's haptins of the first, second or third order.

Dr. W. B. Reed inquires (The Journal, March 8, 1919, p. 747) concerning the permanence of the cures. I regret that I can give no statistics on this point, but I have no reason to suppose that the percentage of relapses is different with the infusion treatment from other treatments. I believe that the permanence of the cure is determined chiefly by the patient's moral stamina.

C. S. Bluemel, M.D., Denver.

Dentistry and Cancer.—Cancer of the mouth in civilized countries has been greatly reduced by good dentistry. Eighty-five per cent. of the cancers of the lip occur in smokers. Formerly clay pipes, which became very hot, were much used, and there has been a notable reduction in the number of cancers of the lip since the clay pipe has gone out of fashion. Smoking, however, is the cause of most cancer of the lip, the tongue and the floor of the mouth.—Major W. J. Mayo, War Department Lectures.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

QUALIFICATIONS FOR THE PRACTICE OF MEDICINE IN BRAZIL

To the Editors—Can you give me any information regarding the practice of medicine or surgery in Rio de Janeiro, Brazil? Are there any opportunities open there, and what are the fees? Any other information will be appreciated.

H. H. S., M.D., Va.

Answer.—The requirements to qualify for the practice of medicine in Brazil are said to be almost prohibitive. An exception is made in favor of foreign physicians who have been connected with faculties of medical schools or who are authors of important medical books. Examinations for licensure are given in Portuguese, and interpreters are not allowed. The examination covers all the branches of the medical curriculum; fees amount to about $85. The applicant's diploma must be officially indorsed in the country where it is issued, and the signatures must be recognized by the minister of foreign affairs of Brazil. With the more friendly relations established with South American countries since the war, it is possible that restrictions against American physicians may be made less severe. We are unable to answer the query regarding opportunities.

BOOKS ON FOODS AND DIET

To the Editor:—I have been asked if I know where a book that contained the relative amounts of protein, carbohydrates and fats of foods could be purchased. The inquirer is a diabetic and is naturally interested to know just what kinds of foods he can partake of and just what to avoid. Will you kindly enlighten me?

Louis J. Wishnefsky, Chicago.

Answer.—The following books may be consulted:

Gephart-Lusk: Analysis and Cost of Ready-to-Serve Foods, Chicago, American Medical Association, 15 cents.
Hill and Eckman: The Starvation Treatment of Diabetes, Boston, W. M. Leonard, $1.
Lusk: Science of Nutrition, Philadelphia, W. B. Saunders Company, $4.50.
Tibbles: Dietetics, Philadelphia, Lea and Febiger, $4.

Possibly the first pamphlet will be the most appropriate in this case. Hill and Eckman's book is also very practical, and while small, covers the ground thoroughly.

REFERENCES FOR SKIN REACTION DIAGNOSIS

To the Editor:—Will you please send me available references for skin reaction diagnosis and subsequent treatment for asthma? I refer to the protein sensitization theories.

J. W. B., Illinois.

Answer.—You may refer to the following articles on the treatment of asthma:

Walker, I. C.: Treatment of Bronchial Asthma with Proteins, Arch. Int. Med. **22:** 466 (Oct.) 1918.
Sterling, A.: Results of Tests for Food Protein Sensitiveness in Small Groups of Asthmatics, Penn. M. J., December, 1918.
Cooke, R. A.: Protein Sensitization in Human with Reference to Hay Fever and Bronchial Asthma, Med. Clinics N. America, November, 1917.
Walker, S. C., and Wilkinson, J.: Comparison Between Cutaneous and Intradermal Tests in Hay Fever and Asthma, J. M. Res., November, 1917.
Rackemann, F. M.: Interesting Reactions Incidental to the Treatment of Two Cases of Bronchial Asthma, J. A. M. A. **69:** 889 (Sept. 15) 1917.

LITERATURE ON VOLUNTARY CONTROL OF PULSE RATE

To the Editor:—Will you please refer me to literature concerning the voluntary control of the pulse rate?

Charles H. Cargile, Bentonville, Ark.

Answer.—You may find the following what you want:

Favill, J., and White, P. D.: Voluntary Acceleration of Heart Beat, Heart **6:** 175, 1917.
West, H. F., and Lavage, W. E.: Voluntary Acceleration of Heart Beat, Arch. Int. Med. **22:** 290 (Sept.) 1918.
Voluntary Regulation of the Heart Beat, editorial, J. A. M. A. **70:** 1374 (May 11) 1918.
Voluntary Acceleration of Heart Beat, editorial, J. A. M. A. **71:** 1318 (Oct. 19) 1918.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA (H): Jacksonville, April 8. Pres., Dr. Chas. W. Johnson, 33 E. Monroe St., Jacksonville.

IDAHO: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

IOWA: Iowa City, March 24-26. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

MINNESOTA: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

RHODE ISLAND: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Texas November Examination

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Dallas, Nov. 19-21, 1918. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 10 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Southern College of Medicine and Surgery	(1914)*	75.9
Chicago College of Medicine and Surgery	(1914)	75
Tulane University	(1918)	90
Woman's Medical College of Pennsylvania	(1895)	75.4
University of Texas (1917) 86.3; (1918) 84.4, 86.6, 89.5, 98.1.		
National School of Medicine, Mexico	(1918)	79.4
FAILED		
Eclectic Medical University	(1918)	60

*Official reports do not show this candidate as a graduate of the institution named.

Pennsylvania January Examinations

Mr. Nathan C. Schaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the oral and written examination held at Philadelphia, Jan. 7-11, 1919. The examinations covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 49 candidates examined, 40 passed and 9 failed. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
University of Louisville	(1910)	1
Baltimore Medical College	(1909)	1
Maryland Medical College	(1900)	1
Boston University	(1912)	1
Hahnemann Med. Coll. and Hosp. of Phila.	(1916) (1917, 2)	3
Jefferson Med. Coll.	(1913) (1915) (1916, 2) (1917, 7)	11
Medico-Chirurgical College of Philadelphia	(1916)	1
Temple University	(1916) (1917, 4)	5
University of Pennsylvania	(1889) (1916) (1917, 8)	10
University of Pittsburgh	(1917)	2
Woman's Medical College of Pennsylvania	(1917)	3
University of Bombay	(1913)	1

FAILED	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1902)	60
University of Louisville	(1917)	69.8
Washington University	(1905)	72
Western Reserve University	(1901)	69
Medico-Chirurgical College of Philadelphia	(1916)	73
Jefferson Medical College	(1917)	72.6
University of Pennsylvania	(1917)	69.8, 70.8
University of Kharkov	(1905)	39.2

Mr. Schaeffer also reports that 3 candidates were licensed through reciprocity from Jan. 23 to Feb. 13, 1919. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Western Reserve University	(1916)	Ohio
Jefferson Medical College	(1916)	N. Carolina
University of Pennsylvania	(1916)	Dist. Colum.

Book Notices

CONCERNING SOME HEADACHES AND EYE DISORDERS OF NASAL ORIGIN. By Greenfield Sluder, M.D., Clinical Professor and Director of the Department of Laryngology and Rhinology, Washington University Medical School, St. Louis. Cloth. Price, $7. Pp. 272, with 115 illustrations. St. Louis: C. V. Mosby Company, 1918.

The purpose of this remarkable book is, apparently, to record the present status of certain obscure but important subjects that have for many years undergone, and are still undergoing, investigations. It is an assembly to date of a work of research: a work that must stamp the investigator and his co-workers as scientists of a high order. Only pathologic conditions of the nose that are not common and are not well understood come under the author's view. Thus all frankly suppurative conditions of the paranasal cells are left out of the discussion. The subject-matter is made up of three main subjects, and these are supplemented by illustrative case histories.

"Vacuum frontal headaches," resulting from complete closure of the frontonasal duct, with or without active inflammatory processes, are, through diagnostic, anatomic and pathologic studies, placed seemingly on a foundation of quite clear understanding. The author speaks of six ways in which this duct may become occluded, and gives confidence by referring to a study of 580 cases.

The syndrome of nasal ganglion neurosis, a "neuralgic" headache syndrome of considerable definiteness and distinctiveness, is offered. The author dwells also on a secondary, less definite, syndrome, resulting, he thinks, from involvement of the sympathetic fibers of this ganglion, and including nasal coryzas, hyperesthesias and rhinorrheas, and indicating relationship to asthma and other distant disorders. This "sympathetic" factor is offered as one of importance, but with appropriate reserve. The sphenopalatine (nasal) ganglion is studied from all angles and the discussion on treatment includes injection of the ganglion with alcohol.

"Hyperplastic sphenoiditis" exists not alone in association with hyperplastic ethmoiditis but also as a separate disease of the sphenoidal region; this is one conclusion of the author's studies. The clinical bearing of certain types of headache, especially migraine, on sphenoidal disease is taken up. This involves an analytic study of the relationship of various nerve trunks to the sphenoidal cavity. Headaches, apparently dependent on a suppurating sphenoid, have sometimes failed to stop when all suppuration had ceased. Nevertheless the author was impressed with their probable local origin. And thus, with the aid of the micropathology of Dr. Jonathan Wright, he has been able to prove the presence of hyperplastic sphenoiditis even without any suppuration. This places the disease at the present time in the category of the extremely difficult, or even impossible, disorders, from the standpoint of diagnosis. We are under the necessity of revising and intensifying our diagnostic capabilities in the nasal region—that is, if nondischarging hyperplastic sphenoiditis as well as ethmoiditis is a reality and is important, as the author tells us it is. Inflammation within the sphenoid *may result in irritation or inflammation of the sphenopalatine* ganglion, but may also produce serious headaches and eye disturbance through affecting important nerve trunks in no direct manner related to that ganglion. Such disturbances are due, the author believes, to a hyperplastic bone process; and he believes that its mode of operation is to "narrow the bone canals through which the nerves pass."

The surgical aspect of the subjects treated are kept prominent, and surgical technic of the ethmoidal-sphenoidal region receives clear elucidation. The point of view is that of the nasal clinician, on whom the solution of the pathologic problems of this region naturally falls. The work is a rhinologist's work, so rich and varied in anatomic, diagnostic and operative information that rhinologists will hardly be fully educated without perusing it. The illustrations are numerous, varied, clear and useful. There is an extensive bibliography. In the presentation of such a complicated array of new information and new speculation, the text must necessarily sometimes become difficult to follow. Any possible additional means of systematizing the material would be advantageous to the reader. And a later edition might well be provided with more subheadings in the text, especially in the chapter on hyperplastic sphenoiditis. But, on the whole, the author is to be congratulated on the work accomplished.

The Human Machine and Industrial Efficiency. By Frederic S. Lee, Ph.D., LL.D., Dalton Professor of Physiology in Columbia University. Cloth. Price, $1.10 net. Pp. 119, with illustrations. New York: Longmans, Green and Co., 1918.

From the industrial point of view the human body is a machine capable of productive work, yet liable to breakdowns, wear and tear with resulting depreciation in value. The one striking difference between the human body and the ordinary machine is that the latter is inanimate. The human machine works according to laws of physics and of chemistry, to be sure, but the attempt to estimate its working power by mere mathematical formulas or by chemical equations is always more or less unsatisfying because there has to be reckoned with that mysterious something called life. And the problem of how to utilize the human machine in the most efficient manner has in it more than securing the employer's aim of a maximum output, or the laborer's desire of a maximum wage. For the worker must be viewed as a human being with a right not only to a living wage but enough to enable him to maintain his position as the head of a family and a self-respecting member of society.

These facts make the study of the worker in industry a complicated and difficult task in which economic and sociological questions are inextricably tangled. But underlying all these there is a physiologic problem involved. The worker has to be studied under varying conditions as to hours of labor, night work, overtime, rests, meals, speed of work, character of occupation, hygienic surroundings, home conditions, etc., all of which conditions have a direct physiologic connection with the problem. Fatigue, for instance, is an objective reality, not merely a subjective sensation of tire, and it influences output, may contribute to accidents, and therefore should be studied from a physiologic and not alone an economic standpoint.

No one in this country is better qualified than Professor Lee to speak authoritatively on this aspect of the subject. Many years ago Mosso did pioneer service along these lines. Miss Goldmarck sharply drew attention to the relation between fatigue and efficiency. Lee has carried on the same work patiently and persistently in laboratory and factory and on the platform, and has investigated and urged others to investigate the physiologic—or pathologic— problems of the laborer.

This small volume is an epitome, almost like a lawyer's brief, of the many topics associated with the laborer as an efficient machine in industry. Dr. Lee is broad-minded and catholic in his views, and does not give the impression of being partisan. He is alive also to the difficulties of the problem, and fully recognizes that conclusions must be cautiously drawn, all conditions for experiment carefully fixed, and that there must always be considered that uncertain and varying "human element" so hard to estimate at its true value, a point so well brought out by Phillip Sargent Florence.

There is a bibliography of ten pages and a good index. The book is written in a clear, entertaining style. As a guide for layman or physician who desires an outline of this timely subject or who wishes to be helped to pursue it still farther, it is of the greatest value.

Los Dèsarreglos Gastro Intestinales del Lactante. Por Dr. Luis Morquio, Profesor de Clinica Infantil, Montevideo. Paper. Pp. 540. Montevideo: Tipografia Moderna, 1918.

Morquio discusses the gastro-intestinal disturbances of infants, which he considers are a medical and social question of importance, not only on account of their undue prevalence but also because they can be prevented. He bases his statement on twenty-five years of experience, both in private practice and in teaching the subject at the University of Montevideo. His book has naturally been prepared to meet the special needs of Uruguay, using for purposes of comparison the data from other countries. The book, from that standpoint, is rather exhaustive as Morquio has attempted to review in various chapters the data that exist in foreign literatures. Naturally he places particular stress on the importance of breast feeding, and incidentally lays stress on the protection of the mother, which he considers of great importance for the child, quoting in this respect Pinard's phrase: "Il faut d'abord, et ensuite et toujours protéger la mère" (the mother must be protected first, last and always).

The outsider will find of special interest the discussion of infant mortality in Uruguay, which Morquio places in the decade 1906-1915 at 50,000 children below the age of 2 years, that is, 5,000 a year, and half of which he estimates could be avoided. He invites attention to the fact that in Montevideo the mortality has actually increased during the five-year period 1910-1914, coinciding with the establishment of infant dispensaries and milk stations, although the coincidence may be merely casual. Specific measures are recommended to deal with this problem in Uruguay.

Social Medicine, Medical Economics and Miscellany

The 1916 Epidemic of Poliomyelitis

In Public Health Bulletin 91 of the Treasury Department, United States Public Health Service, C. H. Lavinder, A. W. Freeman and W. H. Frost have reported the results of their study of the 1916 epidemic of poliomyelitis in New York City and the Northeastern United States, including the whole of New England, the Middle Atlantic states, Delaware, Maryland and the District of Columbia. The report treats separately of the epidemic in Greater New York, with nearly 9,000 cases, and in the outside area comprising the states named, including New York State, with nearly 12,000 cases. In each area a general epidemiologic study was made, and in certain of the districts also an intensive epidemiologic study. The information gathered is analyzed, tabulated and represented in graphic charts, and covers every aspect of the subject. In this outbreak, the greatest in numbers and intensity that has ever been reported, with a high fatality rate, the epidemiologic features are quite similar to those of other epidemics that have been studied. There is nothing peculiar or unique either in seasonal incidence, age, distribution, comparative fatality rates at different ages, or in special conditions, such as environmental surroundings, source of milk and water supplies, occupation, prevalence of insects, or presence of animals, to which could be attributed any influence on the occurrence of the disease. There is also the usual lack of evidence as to contact relationships between cases of the disease. Any idea of a new or powerful strain of the virus is open to doubt, as far as New York City is concerned. The disease is endemic in that city, and the origin in this epidemic was quite possibly indigenous. The development of endemic diseases into epidemic proportions is a common observation, the reasons for which are still unknown. One of the notable features of the epidemic was the definite geographic focus in Brooklyn, and the striking uniformity of its spread both in rate and intensity from this point. Plotted curves of the rise and decline of the disease would seem to indicate that it spread by constantly multiplying foci of infection. As for the epidemic outside the city of New York, it may perhaps be accounted for much on the same grounds, the endemic presence of the disease, with the sudden extension to epidemic proportions for the same unknown reasons that apply to these phenomena. An interesting part of the study was the attempt to trace the relations of the New York City epidemic to the occurrence of cases in neighboring cities and the adjacent country. It was possible to trace a number of cases whose source of infection was probably in New York, and in a small number of cases almost certainly in that city, as these were the first cases occurring in the communities to which the patients had recently migrated from New York City. The report offers the conclusion, however, that the study does not show that the cases actually in persons from New York City were a very large factor in the spread of the epidemic, since such known cases were the first known source of infection in only 9 per cent. of the infected towns, and constituted only 1.4 per cent. of the cases that occurred in the states included. Interesting also is the finding that the development of cases in persons going out from New York City was quite irregular; but in a large proportion of those probably definitely infected before leaving the city, the disease developed within seven days after their exodus.

Eugenic Marriage

The *British Medical Journal*, February 8, thus summarizes the new Norwegian marriage law, which came into force, January 1: A man under 20 and a woman under 18 may not marry without the consent of the authorities. Birth and baptism certificates must be produced before the bans are published. Under certain conditions one or both of the parties may be required to show that they have not been insane. Both must declare in writing that they are not suffering from epilepsy, leprosy, syphilis or other venereal disease in an infectious form. In the other alternative, the subject of these diseases must prove that the other party to the marriage contract is cognizant of the fact, and that both parties have been instructed by a physician as to the dangers of the disease in question. The physician is not to be tied by professional secrecy and is bound to interfere if he knows that any one of these diseases is being concealed by either side. A written declaration must also be given by the parties as to previous marriages and to children born to them out of wedlock. The marriage may be nullified if it is afterward proved that insanity or any of the foregoing diseases has been concealed, or if an incurable morbid condition incompatible with married life exists. Dissolution of the marriage may also be claimed if false declarations have been made or obstacles concealed. If the woman has become pregnant by another man, or if the man has rendered another woman pregnant and this has not been revealed, dissolution of the marriage may be claimed, whether the child of this irregular union be born before or after the marriage; such a claim must be made within six months of the facts becoming known to the claimant. Many other causes are defined as valid for the dissolution of the marriage.

Antivenereal Disease Legislation in Sweden

The Swedish law of June 20, 1918, provides that every one suffering from a sexual disease is obliged to apply for treatment to some physician and to follow the directions of the latter. Hospital treatment and medicines are also free. The physicians are obliged to assume the treatment. Large cities can appoint physicians for the purpose; if more than one physician is appointed, one of them at least must be a woman. Cities of more than 20,000 inhabitants must provide a policlinic in charge of specialists, but there must be nothing to show what the diseases are that are being treated there. The law provides further for a physician to be sent at state expense to remote points when it is learned that sexual disease occurs there. The physicians must enlighten the sick or their parents or guardians in regard to the nature of the disease, the danger for others and the necessity for refraining from marriage, in accordance with a circular which is supplied by the authorities, unless circumstances render this information perilous for the patient. Refractory or negligent patients must be denounced to the public health authorities; also the source of the infection, as to which the physician must enquire. The person denounced as the source of infection must appear before the public health authority (gezondsheid-inspecteur) or send him a certificate to the effect that he or she is healthy or is taking treatment. He or she can be compelled to enter a hospital for treatment, as also refractory or negligent patients with venereal diseases. If a person with venereal disease in a contagious phase is betrothed, the minister or priest concerned is informed so that he can prevent the marriage. If the local public health authority is not obeyed, then the higher officers will interfere with the help of the police. The patients have the right of appeal to the king against the measures imposed, but pending the appeal the measures will not be relaxed. All measures will be kept strictly secret from the outside world. The law abolishes regulation of prostitution. The *Nederlandsch Tijdschrift* from which we translate the foregoing credits it in turn to the *Münchener medizinische Wochenschrift.*

Medicolegal

Federal Court Not Concerned with Vaccination Case

(Gillin v. Board of Public Education of City of Philadelphia et al. (U. S.), 250 Fed. R. 649)

The United States District Court, Eastern District of Pennsylvania, dismisses for want of equity, and with costs to the defendants, the bill of complaint in this case, wherein the plaintiff sought in a federal court relief from the laws and decisions of the courts of Pennsylvania because, having refused to have his children vaccinated as required, they were denied admission to the public schools and he was convicted of having violated the state law requiring parents to send their children to school. The court says that counsel for the plaintiff was widely known to have given much thought to this legislation and to be familiar with its subject-matter in all its features, and the argument addressed to the court was earnest and exhaustive of all that was worth being urged in argument. The general situation was thus presented: Part of the legislation in question has for its object the requirement of a school education. Resistance to its commands invites the imposition of a penalty. Another part of such legislation has for its motive the preservation of the public health by the requirement of vaccination, thus preventing the spread of infectious diseases. The latter provision has no penal sanction. The provision, however, is that unvaccinated pupils may be denied admission to the public schools. The predicament is thus presented: A parent (the plaintiff) refuses to send his children to a school. He thereby incurs a penalty. He refuses to subject them to vaccination. He thereby incurs no penalty. The same parent (the plaintiff) sends his children to school. They are unvaccinated, and admission is denied them. The parent, not having sent them to a school, is then subjected to the penalty. The plaintiff complained of this as the imposition of a penalty for his refusal to comply with the vaccination requirement, which carries no penalty.

It is to be first observed that all the law that was involved (at least primarily) was state law. The person to whom the law might be held to apply was a citizen of the state, the authority and meaning of the laws of which were involved. No federal question was raised, nor has a federal court (in this presentation of the question) jurisdiction of the subject-matter. Jurisdiction was asserted only by virtue of the fourteenth amendment to the Constitution of the United States, which prohibits states from depriving citizens of life, liberty or property, without due process of law. Through his right to "due process of law," the plaintiff had the right to have the state tribunals pass on his defense, and to have the case conducted through all its appellate stages until it reached the highest court of the state, and, if any federal, constitutional or other question was involved, to carry it to the Supreme Court of the United States. There was no complaint of a denial of this right. His real complaint was that he was charged with noncompliance with the requirements of the laws of the state, and that the statutory penalty was imposed by a magistrate. From this judgment he appealed to the proper court sitting for the county. That court affirmed the judgment. From this he appealed to the superior court, with a like result. He then made his appeal to the supreme court of the state, and the

84, or 87.5 per cent., of the patients are living, and 12, or 12.5 per cent., are dead. Of the 24 far advanced cases, 13, or 54.25 per cent., are living and 11, or 45.75 per cent., have died. There were 119 doubtful cases, with 112, or 94.1 per cent., living and 7, or 5:9 per cent., dead, 5 of the 7 patients having died from causes other than tuberculosis. During four years in 1,229 of the 1,654 cases tubercle bacilli were found in the sputum. This was 74.3 per cent. of all cases. Four hundred and thirteen, or 33.6 per cent., are living and 816, or 66.4 per cent., are dead. Eighty-four were incipient, with 62 living and 22 dead. There were in all 495 moderately advanced cases with bacilli in the sputum, of which 259, or 52.3 per cent., are living, and 236, or 47.7 per cent., are dead. Of 650 far advanced cases, 92, or 14.2 per cent., are living, and 558, or 85.2 per cent., are dead.

Subsequent History of Arequipa Patients.—Brown has found that tuberculin, properly used, is a valuable if not indispensable remedy in about 10 per cent. of cases of tuberculosis and that it might be used with advantage as a supplementary safeguard in a much larger number whose immunity is probably sufficient by only a narrow margin. At Arequipa the use of tuberculin has been restricted to patients whose condition and rate of improvement at the sanatorium were not satisfactory, and this has applied to cases in all stages. When the rest on bed and correction of all other physical conditions result in no clinically measurable evidence of improvement after a month of observation, they introduce tuberculin as the only new variable, continuing everything else as before. If a patient ceases to improve before attaining her normal, after a gain however slow, tuberculin is tried. In this way it is possible to judge whether tuberculin is really responsible for a change for the better. In the initial period of correction of underlying conditions extensive use is made of iron and arsenic preparations by hypodermic injection with great benefit. Every chance is given the patient to show her own recuperative ability without its stimulation by tuberculin. Sixty-eight per cent. of patients in the first stage have been back at work from one to five years and are still well.

Archives of Neurology and Psychiatry, Chicago

March, 1919, 1, No. 3

- *Intravenous Use of Arsphenamin in Syphilis of Nervous System. B. Sachs, New York.—p. 277.
- *Histologic Evidence of Path of Invasion of Brain in General Paresis. S. T. Orton, Philadelphia.—p. 285.
- *Associated Incidence of Syphilis of Nervous System and Cardiovascular Syphilis. E. D. Friedman, New York City.—p. 289.
- Systematic Study of Personality in Estimating Adaptability. G. S. Amsden, White Plains, N. Y.—p. 301.
- *Treatment of Dementia Praecox by Intravenous Injection of Sodium Chlorid. W. C. Miller, Warren.—p. 313.
- Bearing of War Neuroses on Immigration. L. Kolb, Ellis Island.—p. 317.

Intravenous use of Arsphenamin in Syphilis of Nervous System.—In general paresis and in tabes the chief lesions are within the substance of the brain or of the cord far removed from actual contact with the cerebrospinal fluid. Therefore, it is almost impossible to bring the spirocheticidal remedy into immediate contact with the foci of disease unless these remedies can be introduced through the blood streams. Sachs calls attention to the fact that it is only in the earliest stages of tabes dorsalis that the disease involves the meninges and spinal ganglions; later on it sets up marked degenerative changes in the spinal tissue, and these secondary changes are entirely beyond the reach of the cerebrospinal fluid and its contents. In the remaining meningo-encephalitic and meningomyelitic processes of specific origin, more or less exudative in character, it might be supposed that spirocheticidal substances introduced into the cerebrospinal fluid might have an active therapeutic effect, if such substances could course freely in the cerebrospinal fluid and if it could be shown that they were retained in this fluid for any satisfactory period of time. It has been shown, however, that the cerebrospinal fluid circulates imperfectly and there is very little absorption of this fluid by the cortical or spinal cells. Hence, however attractive the intraspinal medication has appeared to be, it is essentially useless and theoretically unsound. Sachs has obtained most satisfactory results from intravenous injections administered on alternate days for a period of three to four weeks according to the symptoms presented by the patient, and then allowing a period of complete rest or giving weekly or semiweekly injections of mercuric salicylate for a period of four to six weeks and then again starting in with the same course of arsphenamin injections. Some patients have received as many as forty or fifty intravenous injections within a period of a year or eighteen months.

Path of Invasion of Brain in General Paresis.—Observations were made by Orton on the larger cranial vessels before they enter the brain mass in material taken from nine cases of paresis. The lesions encountered fall into two groups: (1) those in which the process is evidently stationary, and (2) those showing evidence of progressive chronic inflammation. The stationary lesions are comparable in every respect to those of healed syphilitic endarteritis. The active chronic inflammatory lesions consist in a lymphocyte and plasma cell exudate in the perivascular connective tissue sheath—the adventitia—which is quite comparable with that of the vessels within the brain substance, although the plasma cells are a little less numerous and apparently do not tend to mass together into the mosaics seen around many smaller arterioles in the cortex. Such exudates were observed in eight of the nine cases. In one case, in addition to this cellular infiltration, one very small vessel traveling in the adventitia of the carotid in the neck showed the reduplicated succulent swollen endothelial cells which are found in acute stages of syphilitic endarteritis.

Association of Syphilis of Nervous System and Cardiovascular Syphilis.—Among 125 cases of syphilis of the central nervous system seen by Friedman there were nineteen cases of cardiovascular disease—an incidence of 14 per cent. Of these, thirteen showed disease of the aortic valve either alone or in combination with aneurysm or dilatation of the aortic arch. There were two cases of myocardial degeneration with resulting decomposition. Two showed typical aneurysms without demonstrable disease of the aortic valve. In the series was one carotid aneurysm, and one patient showed the clinical picture of premature atherosclerosis with probable occlusion of mesenteric vessels.

Salt Solution Intravenously in Dementia Praecox.—In ten cases of dementia praecox Miller administered intravenous injections of 0.9 per cent. salt solution made in freshly distilled water. The sodium chlorid used was free from sulphates, alkaline earths and heavy metals, magnesium, iodids, potassium, iron and ammonium. Intravenous injections were made by the gravity method. The initial dose was 3 c.c. per kilogram of body weight. Each succeeding dose was increased by 30 c.c. and injections were made at seven-day intervals for a period of four and one-half months. Seven of the ten patients showed no mental improvement; of the remaining three, two brightened up slightly, the third brightened up enough to work. Eight of the ten patients gained in weight from 2 to 15 pounds; one patient lost 1 pound and one patient remained stationary. The blood of twenty-five patients was examined for chlorin content and in none was there a deficiency.

Boston Medical and Surgical Journal

March 6, 1919, 180, No. 10

- Pneumonia and Empyema. H. Gray, Camp Devens, Mass.—p. 265.
- Venereal Infirmary at Camp Humpheys, Virginia. G. G. Smith, Boston.—p. 270.
- Normal Arterial Tension. C. J. Enebuske, Cambridge, Mass.—p. 272.

Endocrinology, Los Angeles

October-December, 1918, 2, No. 4

- Cyclic Changes in Interstitial Cells of Ovary and Testis in Woodchuck (Marmote Monax). A. T. Rasmussen, Minneapolis.—p. 353.
- Rôle of Thymus in Pediatrics. M. B. Gordon, Brooklyn.—p. 405.
- Physiologic Extracts of Lymph Glands: Newest "Hormone." S. Vincent, Winnipeg.—p. 420.
- Case of Myxedema with Tumor of Pituitary Body and Lesions of Other Endocrine Organs. W. H. Good and A. G. Ellis, Philadelphia.—p. 431.
- Points of Contact Between Endocrinology and Gynecology. E. Novak, Baltimore.—p. 438.

Journal of Experimental Medicine, Baltimore

March 1, 1919, **29**, No. 3

- *Temperature of Acutely Inflamed Peripheral Tissue. M. Segàle, Genoa, Italy.—p. 235.
- Study of Atypical Type II Pneumococci. E. G. Stillman, New York City.—p. 251.
- *Occurrence of Bacillus Influenza in Throats and Saliva. I. W. Pritchett and E. G. Stillman, New York City.—p. 259.
- *Determination of Length of Life of Transfused Blood Corpuscles in Man. W. Ashby, Minneapolis.—p. 267.
- *Production of Specific Antisera for (I) Infections of Unknown Cause and (II) Against Agent Causing Chicken Sarcoma. P. Rous, O. H. Robertson and J. Oliver, New York City.—pp. 283 and 305.

Acutely Inflamed Peripheral Tissue.—The experiments set forth by Segàle establish the fact that the heat of the inflamed part has its origin primarily in the local biochemical activity of the cellular elements which participate in the inflammatory process. The inflammatory hyperemia, instead of being the necessary and constant source of the inflammation must be considered a natural physiologic compensation for the abnormal local calorification. The rapid circulation of the blood in the inflamed part tends to moderate the increase in local temperature and to equalize the temperature with that of other parts of the body.

Bacillus Influenzae in Throats and Saliva.—Pritchett and Stillman report facts obtained during an investigation of the bacteriology of influenza which included (1) the use of oleate hemoglobin agar, (2) the incidence of *B. influenzae* in uncomplicated and complicated cases of influenza and the associated types of pneumococci, (3) the occurrence of *B. influenzae* in convalescents, and (4) the occurrence of *B. influenzae* in the mouth secretions or throats of normal people. The medium used in this work was Avery's oleate hemoglobin agar. *B. influenzae* was cultivated from the mouth of 93 per cent. of cases of influenza and bronchopneumonia. It was present in the mouths of 43 per cent. of normal individuals. The types of pneumococci found associated with the complicating bronchopneumonias of influenza were the types usually found in normal mouths.

Life of Transfused Blood Corpuscles.—Ashby claims that the life of the transfused corpuscle is long; it was found to extend for thirty days and more. Therefore, beneficial results of transfusion are not due primarily to a stimulating effect on the bone marrow, but to the functioning of the transfused blood corpuscles.

Specific Antiserums for Infections of Unknown Cause.—The results obtained by Rous and others would seem to indicate for the absorption method some usefulness in the study of immunity to infections of unknown cause. By the method of selective absorption with tissue, protective serum antibodies have been demonstrated by Rous and his associates in the case of an infection of unknown cause; namely, a chicken sarcoma transmitted by a filtrable agent. Geese were repeatedly injected with the finely ground sarcoma and with blood from fowls moribund of it; and their serum acquired the power to prevent the tumor-producing agent from causing growths. That this was not due to antibodies elicited by the chicken tissue as such was shown by exhaustion of the goose serum with chicken red cells, a step which had not the least effect on the tumor-preventing power, and also by experiments with rabbits immunized as were the geese. These animals developed strong chicken antibodies in their serum which failed nevertheless to affect the tumor-producing agent.

Journal of Orthopedic Surgery, Boston

March, 1919, **1**, No. 3

- Transplantation in Gunshot Injuries of Nerves. T. P. McMurray, Liverpool, England.—p. 126.
- Tendon Fixation in Irrecoverable Musculospiral Paralysis. A. R. Jones, London, England.—p. 135.
- *Bristow Coil and Treatment by Graduated Muscle Contraction. A. H. Freiberg, Cincinnati.—p. 148.
- *Severe Acute Sprains of Knee Joint. M. C. Harding, M. C.—p. 152.
- Practical Applications of Pathology to War Injuries of Nerves. S. M. Cone, M. C., U. S. A.—p. 157.
- Changes Produced in Growing Bone After Injury to Epiphyseal Cartilage Plate. S. L. Haas, San Francisco.—p. 166.

Bristow Coil and Treatment by Graduated Muscle Contraction.—Attention is directed to a method of physical therapy which is as yet but little known in this country and which comes from the war practice of our English allies with the assurance of a considerable usefulness. The fundamental idea of this method lies in the ability to stimulate the damaged muscles to contraction by an induced current in such a way that this may be exactly graduated both as regards degree and rhythm. One may begin with contraction of minimal intensity and very slow rhythm and proceed to increase in both regards according to the functional response which is thereby obtained. The method also has the very great advantage of enabling one to limit stimulation very nearly to a particular muscle or group of muscles and to an extent not possible with the older methods. The current which is yielded by the Bristow coil differs from that of the usual faradic coil only in so far as it may be used in very great intensity without producing pain and, as stated, with the opportunity of quite definitely regulating and graduating the dosage from treatment to treatment and from case to case, as well. No effect is attributed to the electricity as such, except as it is used as the means by which the muscle is made to contract to the desirable degree and frequency.

Sprains of Knee Joint.—Harding urges aspirating any distended joint promptly, since practically all effusions are bloody and absorb slowly. They lead to the formation of a thickened, chronic joint. Distention of the capsule must be prevented, as it is one of the main causes of a weakened knee in after life. Early baking and massage and strict supervision of the manner of returning to use are likewise important.

Kentucky Medical Journal, Bowling Green

March, 1919, **17**, No. 3

- *Chronic Interstitial Nephritis. F. H. Clark, Lexington.—p. 102.
- *Cardiovascular Changes in Chronic Interstitial Nephritis. B. C. Frazier, Louisville.—p. 104.
- *Symptom Complex of Chronic Interstitial Nephritis. R. H. Davis, Louisville.—p. 105.
- *Chronic Interstitial Nephritis with Especial Reference to Cardiovascular Changes. J. A. Flexner, Louisville.—p. 107.
- *Diagnostic Findings in Gastric and Duodenal Ulcers. J. A. Sweeney, Louisville.—p. 111.
- Traumatic Injuries of Chest. W. L. Gambill; Jenkins, Ky.—p. 116.
- Intraspinous Treatment of Cerebrospinal Lues. L. K. Baldauf, Louisville.—p. 118.
- *Chorea Etiology; Post-Mortem Findings in Acute Case. S. Graves and B. H. Paige, Louisville.—p. 122.
- Aneurysm of Left Subclavian Artery. B. C. Frazier, Louisville.—p. 127.
- I. Metastatic Abscesses Following Iscio-Rectal Abscess. II. Extensive Suppuration of Buttocks Following Burn. B. Asman, Louisville.—p. 128.
- Headache. S. G. Dabney, Louisville.—p. 129.
- Removal of Piece of Steel from Eye. A. O. Pfingst, Louisville.—p. 132.
- Renal Stone in Child. B. C. Frazier, Louisville.—p. 135.

The papers by Clark, Frazier, Davis, Flexner and Sweeney were abstracted in THE JOURNAL, October 5, pp. 1164 and 1165.

Chorea Etiology.—The case reported by Graves and Paige offers several interesting features. Apparently, a typical acute chorea made its appearance synchronously with acute infection. The spinal fluid was negative for bacteria, syphilitic antibody and globulin, but was under pressure. Associated with the chorea was acute endocarditis and lobular pneumonia with marked toxic lesions in nearly all the parenchymatous organs. The postmortem Wassermann was negative. Histologically the brain was negative.

Medical Record, New York

March 8, 1919, **95**, No. 10

- Practical Points in Diagnosis of Syphilis of Nervous System. E. L. Hunt, New York City.—p. 391.
- *Theory of Asthma as Confirmed by Nearly Four Hundred Cases Successfully Treated. M. I. Knapp, New York City.—p. 393.
- Kromayer Lamp and Colloidal Sulphus in Treatment of Post-Influenzal Alopecia. C. A. Simpson, Washington, D. C., and Newport, R. I.—p. 402.
- *Iodin Urine Test for Acidosis. C. Mitchell, Chicago.—p. 404.

Theory of Asthma.—The underlying cause of asthma according to Knapp is the overproduction of irritating gases in the gastro-intestinal canal, which, operating physically and chemically, produce the asthmatic paroxysm. 1. Physically, by overdistention of abdomen and of the pressure upward of the diaphragm against the lungs, whose expansion is violently interfered with. 2. Chemically, by irritating the esophagus and pharynx, which irritation the patient attempts to clear away by the act of coughing. So long as the irritation continues, so long continues the ineffective coughing. The longer the irritation continues, the more violent becomes the act of coughing, the consequence of which is dilatation of the pulmonary air vesicles, which may and often does terminate in emphysema of the lungs. The asthmatic paroxysm ends when the irritation in the esophagus and pharynx have been removed, partly by neutralization of the irritation and partly by its dilution with pharyngo-esophageal secretions.

Iodin Urine Test for Acidosis.—An iodin test for acidosis has been devised by Mitchell which he claims can be used quantitatively. The best way to apply the test is the following: To 145 c.c. of water (hydrant water will do) are added 3 c.c. of Lugol's solution and 2 c.c. of a saturated solution of picric acid, the whole being thoroughly mixed. The result is a fine clear reddish liquid of bright color. Pour this liquid into a white dish and heat it on the water bath to a temperature of 180 F., but if a water bath is not available it may be heated over the flame until fumes are abundantly given off, boiling being avoided by turning down the flame sufficiently. When thus heated, the urine is added as quickly as possible but in small amounts at a time, using for this purpose a graduated buret. If, however, a buret is not available, a small graduate or graduated bottle may be used from which to pour the urine into the hot liquid. In acidosis the amount of urine needed to turn the bright red color to a bright yellow color is small, and the smaller the worse the case. In severe cases 2 or 3 c.c. of urine will almost immediately discharge the red color. In cases of moderate severity 8 or 10 c.c. may be required. Normal urines do not usually affect the color in smaller amounts than 15 c.c., except possibly in unusual conditions of concentration, where the amount of urine in twenty-four hours may be but a few hundred cubic centimeters. In most cases of normal urine, of specific gravity ranging from 1.015 to 1.020, the amount of urine required to effect change from red to yellow is around 20 c.c., or even higher, as high as 50 c.c. in some cases.

Military Surgeon, Washington, D. C.

March, 1919, **44**, No. 3

Duties and Responsibilities of Regimental Medical Officer. G. Cree.—p. 221.
Improved Cubicle Arrangement. W. C. Mabry.—p. 225.
Evacuation System for a Base Hospital. E. S. Kilgore.—p. 230.
Serving Food in Military Hospitals. R. K. Hoskins.—p. 234.
Cafeteria System of Hospital Messing. A. G. Wilde.—p. 239.
Advance Surgical Formations—Modifications Which Seem Necessary in Light of German Offensive of March-July, 1918. G. de Tarnowsky.—p. 245.
Epidemic Meningitis Situation at Camp MacArthur. L. S. Medaliai.—p. 258.
Place of Pathologic Anatomy in Military Medicine. J. Ewing.—p. 273.

New Orleans Medical and Surgical Journal

March, 1919, **71**, No. 9

Histologic and Bacteriologic Investigation of Juxta-Articular Nodule in Leper. D. H. Currie and H. T. Hollman, U. S. Leprosy Investigation Station.—p. 384.
Antityphoid Serotherapy. A. Rodet, France.—pp. 388-391.
League of Nations. D. H. Theard, New Orleans.—p. 393.

New York Medical Journal, New York City

March 8, 1919, **109**, No. 10

Rôle of Focal Infections in Psychoses. H. A. Cotton, Trenton, N. J.—p. 397.
Eradication of Tuberculosis in Localities. E. Souchon, New Orleans.—p. 404.
Social Diseases in Army. E. S. Cooke, Philadelphia.—p. 404.
Pneumonia in Influenza. A. C. Reed, San Francisco.p. 406.
Postinfluenza Alopecia. O. L. Levin, New York City.—p. 409.
Hospital Abuses. J. W. Kenneey, Philadelphia.—p. 411.
Inactivity Means Waste. R. H. MacNair, Springfield, Mass.——p. 413.
Physical Education and National Health. J. Rudis-Jicinsky, Chicago.—p. 414.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 416.

Public Health Journal, Toronto

February, 1919, **10**, No. 2

Relation of Pediatrician to Community. A. Brown, Toronto.—p. 49.
Rotary Means Service. W. H. Alderson, Toronto.—p. 62.
New Social Order. S. Z. Batten, Philadelphia.—p. 70.

South Carolina Medical Association Journal, Greenville

February, 1919, **15**, No. 2

Report on Epidemic and Contagious Diseases Occurring in South Carolina During 1918. J. A. Hayne, Columbia, S. C.—p. 362.
Sodium Citrate and Acetate Treatment of Influenza. W. T. Landet, Williamston, S. C.—p. 367.
Wassermann Test. B. Nims, Columbia, S. C.—p. 368.
Intussusception. R. N. Pollitzer, Charleston, S. C.—p. 369.
Importance of Early Recognizing Mental Disorders. J. F. Munnerlyn, Columbia, S. C.

Southern Medical Journal, Birmingham, Ala.

February, 1919, **12**, No. 2

Differentiation of Organic and Functional Disorders of Stomach. J. H. Gibbes, Columbia, S. C.—p. 57.
*Standardized Rest in Treatment of Pulmonary Tuberculosis. S. E. Thompson, Kerrville, Texas.—p. 61.
Problems of Base Hospital Laboratory. A. H. Bunce, Atlanta, Ga.—p. 65.
Who Pays? Cost of Sickness and Mortality. J. H. Florence, Tulsa, Okla.—p. 71.
*Malaria Control Demonstrated at Hamburg, Ark. H. A. Taylor, New York City.—p. 74.
Roentgen Ray Treatment of Skin Cancer. H. H. Hazen, Washington, D. C.—p. 87.
Large Angio-Lipo-Fibroma of Thigh. F. C. Watson, Bocas del Toro, R. P.—p. 92.
Judgment Versus Operative Technic in Obstetrical Work. J. R. Garber, Birmingham, Ala.—p. 93.
Results of Examination of Five Thousand Selective Service Registrants. A. McGlannan, W. W. Requardt and E. H. Hutchins, Baltimore.—p. 97.

Standardized Rest in Tuberculosis.—Prolonged rest in bed in the treatment of phthisis pulmonalis is advocated by Thompson because he believes that exercise has no place in the treatment of a tuberculous lesion, regardless of its location. The final results of treatment in most tuberculosis sanatoria are disappointing. Permitting the patient to go on exercise before he is ready for it is the most common cause in curable cases. Immobilization in bed stops absorption; septic symptoms disappear, the patient gets fat. He should be kept quiet till scar tissue is formed and healing is well established.

Malaria Control Demonstration.—The effectiveness and practicability of measures directed exclusively against the propagation of mosquitoes as a means of controlling malaria in towns, was further demonstrated during 1917 by operations carried on in Hamburg, Ark. The work was conducted by the International Health Board in connection with the United States Public Health Service and the Arkansas State Board of Health. Taylor describes what was done.

Surgery, Gynecology and Obstetrics, Chicago

March, 1919, **27**, No. 3

*Pathology of Foreign Bodies in Air and Food Passages: 628 Cases. C. Jackson, Philadelphia.—p. 201.
*Blood Transfusion. J. de J. Pemberton, Rochester, Minn.—p. 262.
Treatment of Certain Types of Anorectal Fistula. A. A. Landsman, New York City.—p. 276.
*Classification of Cutaneous Neoplasms. F. T. Van Beuren, Jr., New York City.—p. 278.
*Postoperative Pneumonitis. M. Cleveland, M. C., U. S. A.—p. 282.
Hydatiform Degeneration in Tubal Pregnancy: Report of Forty-Eight New Cases. A. W. Meyer, Palo Alto, Calif.—p. 293.
Immediate Surgical Management of Acute Appendicitis in Military Hospitals: Present Method of Administering Triple Typhoid Vaccine. H. McKenna, Chicago.—p. 303.
*Omentopexy in Cirrhosis of Liver. E. Eliot, Jr. and R. Colp, New York City.—p. 309.
*Incompetency of Ureterovesical Valves not Due to Obstruction. T. N. Hepburn, Hartford, Conn.—p. 316.
*Operation for Production of Sterility. R. C. Cupler, Chicago.—p. 317.
Lowe's Colostomy Receptacle. H. A. Lowe, M. C., U. S. A.—p. 319.
Pocket Method of Closing Skin Defects. J. E. Fuld, New York City.—p. 320.
*Method of Excluding Septic End of Bowel During Intestinal Resection. R. E. Farr, Minneapolis.—p. 322.

Simplified Technic for Intravenous Injection of Arsphenamin or Antitoxin in Combination with Normal Salt Solution. P. C. Clemensen, Chicago.—p. 323.
New Forceps for Control of Hemorrhage after Removal of Tonsils. W. A. Gross, Chicago.—p. 324.
Case of Anthrax: L. J. Pritzker, Chicago.—p. 325.
*Peritoneal Drainage. C. L. Heald, Cedar Rapids, Ia.—p. 326.
Transfusion Apparatus. R. E. Farr, and E. W. Gilroy, Minneapolis. —p. 327.
*Suggested Step in Technic of Inguinal Herniotomy. M. Pitzman, St. Louis.—p. 329.

Foreign Bodies in Air and Food Passages.—Jackson analyzes 628 cases in which he removed a foreign body from either the lungs or the esophagus. Taking together all deaths from any cause whatever within one month after endoscopy, the mortality has been 1.9 per cent. Of the twenty-three cases in which the foreign body had been present for periods ranging from two months to twenty six years, all of the patients recovered perfect health except two. One of the two died after removal of a nail that had been in the lung for four years. The symptoms pointed to embolism of the middle meningeal artery. The child was known to have an endocardial lesion secondary to the septic pulmonary focus; but whether the embolus was from this or from the primary infective focus in the lung could not be determined (4). The other patient died of some thoracic or abdominal condition of sudden onset, the nature of which could not be determined.

Blood Transfusion.—A series of 1,036 transfusions performed on 429 patients are recorded by Pemberton. Five were done by means of the paraffin-lined cylinder, thirty by a modified cannula-syringe technic, and the other 1,001 by the citrate method. The cases are grouped according to indications for transfusion: Primary (pernicious) anemia, 657 transfusions in 185 cases. Secondary anemia, 243 transfusions in 149 cases. Bleeding, 81 transfusions in 59 cases. Acute toxic and septic conditions, 34 transfusions in 25 cases. Leukemias, 20 transfusions in 10 cases. Shock, 1 transfusion in 1 case. In 219 transfusions (21 per cent.) of the series, there occurred from fifteen minutes to one hour later a slight reaction of chill and fever, a temperature of 100 to 105 F., with or without malaise, headache, nausea and vomiting and diarrhea, and followed, in a small percentage of cases, on the third day after the transfusion, by an eruption of herpes. In another 15 per cent. of transfusions there occurred a rise of temperature to 100 F. or above, not associated with chill and nausea. These were, in every instance, of a transitory nature, the temperature returning to normal in from twelve to thirty hours, and in only two instances was it at all probable that the good of the transfusion was vitiated by this complication.

These reactions occur early after the introduction of 50 or 100 cubic centimeters of blood; the patient first complaining of tingling pains shooting over the body, and a fulness in the head and an oppressive feeling about the percordium, and, later, an excruciating pain localized in the lumbar region. Slowly but perceptibly the face becomes suffused, a dark red to a cyanotic hue; respiration becomes somewhat labored, and the pulse rate, at first slow, sometimes suddenly drops as many as 20 to 30 beats a minute. The patient may lose consciousness for a few minutes. In one half of the cases an urticarial eruption, generalized over the body or limited to the face, appeared along with these symptoms. Later, the pulse may become very rapid and thready; the skin becomes cold and clammy, and the patient's condition is grave. In from fifteen minutes to an hour, a chill occurs, followed by high fever, a temperature of 103 to 105 F., in which the patient may become delirious. Jaundice may appear later. The macroscopic appearance of hemoglobinuria is almost constant. In three such instances the symptoms were not recognized at the time of the transfusion, and 500 cubic centimeters of blood were injected. All the patients died, two in one and three hours, respectively, following the transfusion, and one became comatose shortly afterward and died thirty hours later. In the other nine instances the symptoms were early recognized and interpreted, and the transfusion was concluded after the injection of 50 to 100 cubic centimeters of blood. Epinephrin and atropin were administered with good effect. There was no mortality in this group.

The cases point out most strikingly the fact that the injection of incompatible blood, namely, in which the donor's cells are agglutinable by the serum of the patient, is attended by the development of symptoms of the gravest nature, and that if these are not early recognized and the transfusion concluded before the injection of a large quantity of blood, fatal results are to be expected.

Cutaneous Neoplasms.—Cutaneous neoplasms are divided into three groups by Van Beuren: (1) those on the skin; (2) those in the skin, and (3) those beneath the skin. He advises that every new growth of the skin should be excised as soon as one can decide that it is a new growth. That if any suspicion of present malignancy is entertained and local excision is thought adequate, a much wider incision of the tumor should be planned than has commonly been practiced in the past.

Postoperative Pneumonitis.—At the New York Presbyterian Hospital during 1917, out of 1,940 operations there were sixty-five cases of postoperative pneumonia, a morbidity percentage of 3.3. Cleveland found that amount the predisposing factors of postoperative pneumonia are: (*a*) coughs, colds, etc., previous to or on admission to the hospital; exposure to cold while in the hospital; (*b*) condition of the patient; (*c*) type of operation; (*d*) anesthesia. Eighty-six per cent. of the operations performed in this series were celiotomies, and a majority of these were of a relatively simple nature, such as hernia repair and removal of simple appendix. Although the gas-ether sequence, closed method, anesthesia was followed by forty-four cases, Cleveland points out that the anesthetic per se does not cause the pneumonia, a statement which is no longer doubted. The irritation of the anesthetic does, however, prepare the way for organisms already present in the upper respiratory tract by lowering the resistance of the lung tissue. Roentgenography was employed as an aid to diagnosis in fifty-six out of sixty-five cases.

There were seven deaths in the sixty-five patients, making the mortality 10.7 per cent. No one of these occurred where the pneumonia was the only complication; in other words, no otherwise healthy patient undergoing operation died as a result of his pneumonia. Malignancy claimed three patients. one with carcinoma of the colon, another with carcinoma of the esophagus and a third with carcinoma of the cystic duct. All of these were in very poor condition. A pulmonary embolus caused one death. Another patient died in a diabetic coma following incision and drainage of an alveolar abscess. A mastectomy in a patient 65 years of age, not in very good condition, resulted in a fatal pneumonia. The seventh patient died of inanition following a duodenal fistula rather than from the pneumonia. Two other patients died in the hospital; one, a paraplegia with a positive blood culture, died of sepsis six weeks after the embolic pneumonia had subsided; the other died over a month after his pneumonia and from no associated condition.

Omentopexy in Cirrhosis of Liver.—Omentopexy was done in twenty-three cases of cirrhosis of the liver. Eighteen cases were due to excessive use of alcohol; two to syphilis; cause unknown in one case and in two the ascites was associated with an enlarged liver secondary to cardiovascular disease. In one of these last-mentioned cases the patient died of acute cardiac dilatation directly after the operation. The other, three years after operation, is still alive and greatly improved.

Incompetency of Ureterovesical Valves.—Hepburn reports a case which he believes supports the theory of inflammatory infiltration as a cause of ureterovesical valvular incompetency; the inflammation apparently started in the bladder instead of in the kidneys.

Operation for Production of Sterility.—Cupler divides the tube and turns back a peritoneal cuff on the proximal end. The denuded muscle and mocosa are crushed in the bite of an angiotribe. A catgut ligature is applied in the crease, the cuff is brought over and a ligature is applied. The distal end of the tube is ligated, and both ends approximated and the rent in the broad ligament is closed.

Excluding Septic End of Bowel During Intestinal Resection.—Farr turns a rubber glove inside out over the divided bowel, this keeping it out of the field.

Peritoneal Drainage.—Heald uses a double caliber glass tube with movable gauze wick. The double tube is one-half inch in (outside) diameter. The lower end is closed, except for an oval opening one-eighth inch from the lower end on each side, and a small opening in the bottom. The longitudinal septum extends to one-fourth inch from the lower end. One end of a gauze wick, 1 inch wide and several yards long, is inserted in the upper end of one "barrel," and is pushed down its lumen to the lower end with a small probe, pulled out of the opening in the bottom, the end is reinserted through this opening and pushed up through the other "barrel," passing around the smooth lower end of the septum. The tube, threaded with the wick, is inserted to the bottom of the cavity, and the wound is closed completely around it. The tube should be long enough to project above the dressings, which are covered and protected by a sheet of rubber dam, through a small stretched opening in which the tube has been passed previously. The roll of sterile gauze wick in a cloth bag is pinned outside the dressings and covered with a sterile towel. During the first twenty-four hours, at more or less frequent intervals, depending on the quantity of purulent secretion, the nurse, with sterile gloved hands, steadies the tube with one hands, pulls the wick through with the other until it comes through dry, cuts off and removes the soiled portion, and replaces the sterile towel, without having disturbed the patient. After twenty-four hours the tube, having served its purpose, is removed, and replaced by a small "cigaret," or by any form of drain the surgeon may prefer. The method is used in the drainage of any cavity where dependent drainage is impracticable, but in peritoneal infections from perforations, it will probably be found most useful.

Inguinal Herniotomy.—Pitzman's suggestion in technic is simply to insert the mattress sutures for the repair of the abdominal wall, while the peritoneal cavity is still open.

Tennessee State Medical Association Journal, Nashville

February, 1919, **11**, No. 10

Epidemiologic Study of Recent Outbreak of Influenza in Nashville. R. C. Derivaux, U. S. P. H. S., and W. E. Hibbett, Nashville.—p. 364.
Social Evil. C. A. Abernathy, Pulaski.—p. 371.
Clergyman and Physician—Some Thoughts on Revealed and Natural Religion. G. R. West, Chattanooga.—p. 375.
Statistics of Epidemic of Influenza in New York City. W. H. Guilfoy, New York City.—p. 379.
Influenza Epidemic. W. L. Somerset, New York City.—p. 383.
Scientific Medicine: What It Is, and What It Is Not. E. Linton, Washington.—p. 385.

Texas State Journal of Medicine, Fort Worth

February, 1919, **14**, No. 10

Interrelationship Between Ovarian Secretion and Uterus. F. C. Floeckinger, Taylor, Tex.—p. 322.
Dementia Praecox. R. E. Cloud, Austin.—p. 325.
Nervous and Mental Strain. T. L. Moody, San Antonio.—p. 327.
"Razor-Strop Pain" and "Hair-Dressing Pain" (Tonsillar): Common Cause of Shoulder Disability. H. B. Decherd, Dallas.—p. 329.

United States Naval and Medical Bulletin, Washington, D. C.

January, 1919, Special Number

*Report on Medical and Surgical Developments of the War. W. S. Bainbridge.

The following subjects are contained in this report: Treatment of war wounds by the Allies and by the Germans; developments in war surgery; trench fever; care of wounded from firing line to convalescent camp; reeducation for disabled; modern treatment of burns; plans for surgical evacuation hospital formation; proposed organization of educational service in war surgery; plan for surgical sanitary formations; technical instructions for impending military activities; base hospitalization and surgical measures for attacking army corps; cartilaginous cranioplastics (Chutro).

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 15, 1919, **2**, No. 3033

*Pathogenesis of Deficiency Disease. R. McCarrison.—p. 177.
Placenta Previa. H. Briggs.—p. 179.
*Prevention of Posterior Bowing in Compound Fracture of Femur. C. B. Alexander.—p. 180.
Delayed Primary Suture of Wounds. H. H. Hepburn.—p. 181.
Detection of Saccharosuria, Inosituria and Lactosuria by Mycologic Method. A. Castellani, and F. E. Taylor.—p. 183.

Pathogenesis of Deficiency Disease.—The conclusions reached by McCarrison as a result of his clinical, anatomic, histologic and bacteriologic observations may be summarized as follows: The absence of certain accessory food factors from the dietary—improperly termed "antineuritic"—leads not only to functional and degenerative changes in the central nervous system, but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis. The symptom complex resulting from the absence of these substances is due (a) to a chronic inanition; (b) to derangement of function of the organs of digestion and assimilation; (c) to disordered endocrine function; (d) to malnutrition of the nervous system, and (e) to hypersuprarenalinemia. Certain organs undergo hypertrophy; others atrophy. Edema has invariably (100 per cent.) been associated with great hypertrophy of the suprarenal glands, while 85 per cent. of all patients having great amount of epinephrin in such patients as determined by physiologic methods, has been considerably in excess of that found in cases not presenting this symptom, and greatly in excess of that found in normal suprarenals. Inanition gives rise to a similar state of suprarenal hypertrophy, and to a similar state of atrophy of other organs, the brain excepted. The edema of inanition and of beriberi is believed to be initiated by the increased intracapillary pressure which results from the increased production of epinephrin, acting in association with malnutrition of the tissues. Gastric, intestinal, biliary and pancreatic insufficiency are important consequences of a dietary too rich in starch and too poor in "vitamines" and other essential constituents of food.

It is suggested by McCarrison that some of the obscure metabolic disorders of childhood might be examined from this viewpoint as well as from that of endocrine gland starvation. A state of acidosis results from the absence of so-called "antineuritic vitamins." Great atrophy of muscular tissue results from deficiency of accessory food factors. Profound atrophy of the reproductive organs is an important consequence of the "vitaminic" deficiency. The central nervous system atrophies little: paralytic symptoms, when they occur, are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration. It is thought that, because of their atrophy out of all proportion to other tissues, the thymus, the testicles, the ovary and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted. The bones are thinned, and there is a loss of bone marrow. The red cells of the blood are diminished by about 20 per cent. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Infections and parasitic agencies are often important causes in determining the onset of symptoms. "Vitaminic" deficiency renders the body very liable to be overrun by the rank growth of bacteria.

Prevention of Posterior Bowing in Compound Fracture of Femur.—Alexander has devised a splint suitable for all fractures in the lower two thirds of the femur. In effect it is a double Thomas bed knee splint, an outer and an inner. The outer is the ordinary Thomas splint, and to its end the extension is fixed in the usual way. At the junction of the ring with the inner bar, and at the same level on the outer bar, is a pivot, to which is attached another—the inner Thomas splint (minus its ring): it fits easily within the outer, and is bent 4 inches from its lower end, so as to raise the whole off the bed. By raising the outer splint by its end the patient's thigh and leg are also raised, but the inner splint turning on the pivots remains resting on the bed.

Glasgow Medical Journal

February, 1919, **91**, No. 2

Diagnosis and Treatment of Syphilis. H. C. Donald.—p. 65.
Self-Revelation. J. I. Robertson.—p. 73.
*Influence of Cerebral Symptoms on Prognosis in Pneumonia in Childhood. M. Putnam.—p. 84.

Influence of Cerebral Symptoms on Prognosis in Pneumonia.—The total number of cases of lobar and primary bronchopneumonia studied by Putnam was 120, with a mortality of 26, or 21.6 per cent. Nineteen, or 16 per cent. of the children, presented early cerebral symptoms, with two deaths, giving a mortality rate of 10 per cent., and of these only five demonstrated tetany. Six patients suffered from late cerebral symptoms with four deaths, or a mortality rate of 66 per cent.; of these four fatal cases three had pneumococcal meningitis. It is thus seen, first, that late cerebral symptoms are of much more serious import than early cerebral symptoms; second, that the mortality rate in cases with early cerebral symptoms is decidedly lower than that in the disease in children generally; and, third, that tetany could only be cited as a cause of the early cerebral manifestations in slightly over 26 per cent.

Lancet, London

Feb. 15, 1919, **2**, No. 4981

Surgery of Spinal Cord in Peace and War. A. J. Walton.—p. 243.
*Treatment of Gunshot Wounds with Acriflavine Paste. A. H. Tubby, G. R. Livingston and J. W. Mackie.—p. 251.
Treatment of Trench Fever by Intravenous Injection of Collargol. J. E. Sweet and H. B. Wilmer.—p. 252.
Adhesions of Sigmoid Associated with Congenital Abnormality of Mesentery Causing Constipation. J. P. L. Mummery and D. Pennington.—p. 254.
*Resorcin Swab in Whooping Cough Cases. N. Macleod.—p. 254.
Biology and Medical Curriculum. T. G. Hill.—p. 173.
Acute Erythema Resembling Measles. F. H. Kelly.—p. 255.
Formalin Spray in Checking Influenza at German Prisoners Camp, Isleworth. A. Wylie.—p. 256.

Treatment of Gunshot Wounds with Acriflavine Paste.—The paste used by the authors consists of bismuth carbonate, 25 per cent.; paraffin, 75 per cent.; acriflavine, 0.5 per cent. This paste was used in place of "bipp," and, it is believed, with better results.

Resorcin Swab Treatment of Whooping Cough.—Macleod swabs the pharynx with a 2 per cent. solution of resorçin in glycerin and water, 1 and 12 parts, respectively.

Quarterly Journal of Medicine, Oxford, England

October, 1918, and January, 1919; **12**, Nos. 45 and 46

*Spleen and Leukocytes in Trench Fever. D. L. Tate and J. W. MacLeod.—p. 1.
*Pathogenesis of Diphtheritic Paralysis. II. Paralysis of Faucial and Extra-Faucial Diphtheria Following Skin and Wound Infections. F. M. R. Walshe.—p. 14.
*Id. III. Central Nervous System Lesion Underlying Local Paralyses. F. M. R. Walshe.—p. 32.
*Respiration and Oxyhemoglobin Dissociation Curves and Buffer Value of Blood in Normal Men. L. S. Debenham and E. P. Poulton.—p. 38.
*Vomiting in Pregnancy. W. Gilliatt and E. L. Kennaway.—p. 61.
Case of Methemoglobinemia or Sulph-Hemoglobinemia. R. A. Jamieson.—p. 81.
*Acute Infective Polyneuritis. I. Clinical Phenomena of Disease in Man. II. Morbid Anatomy of Disease in Man and Monkey, Together with Experimental Production of Disease in Monkey. III. Isolation and Culture of Virus of Disease. J. B. Bradford, E. F. Bashford and J. A. Wilson.—p. 88.
Massive Collapse of Lung as Result of Gunshot Wounds; Wounds of Chest. J. R. Bradford.—p. 127.

Spleen and Leukocytes in Trench Fever.—A palpable spleen was detected by Tate and MacLeod in 15 per cent. of the cases of trench fever observed by them. Total and differential leukocyte counts were made by the authors in twenty-seven cases of trench fever. Twenty-four counts were made on patients during pyrexia, and the average total count was 10,766. Eleven counts were made in apyrexia, giving an average total of 10,283 leukocytes.

Pathogenesis of Diphtheritic Paralysis Following Skin and Wound Infections.—Examination made by Walshe of a series of cases of diphtheritic paralysis following faucial and extrafaucial (wound and cutaneous) infections showed that palatal paralysis does not occur, except after faucial diphtheria. In extrafaucial diphtheria the paralysis often shows (27 per cent.) an onset anatomically related to the infective focus. Polyneuritis follows both faucial and extrafaucial diphtheria equally, and, irrespective of the site of the infective focus, presents a remarkably constant symptom complex. Paralysis of accommodation also follows both forms of infection, though the faucial more frequently (86 per cent.) than the extrafaucial (33 per cent.). It is, therefore, not a "local" paralysis, and its more constant association with faucial infections may be explained by the close proximity of the local central nervous system lesion in this case to the oculomotor nuclei. The palatal paralysis constitutes the "local," the ocular affection the "specific," and the polyneuritis the "generalized" forms of diphtheritic paralysis. In extrafaucial diphtheria, as in tetanus, the "local" paralysis varies with the site of the infective focus.

As for the pathologic processes underlying this symptom-complex, it seems highly probable that the local paralysis is an "ascending lymphogenous toxi-infection" (by the perineural lymphatics) of the central nervous system from the infective focus. The essential pathologic lesion here is central and not peripheral, and is situated in the nuclear complex already described. The ocular and generalized symptoms are probably the result of the circulation of the toxin in the blood stream, whence it gains access to the whole nervous system, central and peripheral. The essential nervous lesion here is probably both central and peripheral.

Respiration and Oxyhemoglobin Dissociation Curves.—The pulmonary ventilation, alveolar CO_2, alveolar ventilation, tidal air, dead space, and respiratory exchange were measured by Debenham and Poulton in ten normal men at rest in bed. The methods described by Haldane and Priestly, and by Hasselbalch and Lindhard, for measuring the alveolar CO_2 have been compared, and show satisfactory agreement. Values for K (the constant of the oxyhemoglobin dissociation curve) at the alveolar CO_2 pressure have been determined in eleven normal men, and agree with values previously published. Results for the buffer value of normal blood are given. The buffer value of blood in states of acidosis is considered.

Increased Acetone Production in Vomiting in Pregnancy.—Three cases are recorded by Gilliatt and Kennaway in which the examination of urine was found to be of some empirical value. It is noteworthy that two of the patients were Jewesses, and the only fatal case of vomiting of pregnancy in the records of the Middlesex Hospital for the last ten years was a Jewess. There was a history of the occurrence of vomiting in previous pregnancies in each patient. The authors point out that in some forms of pernicious vomiting a stage is reached when the ammonia index shows a rapid increase in the course of a few days to values between 30 and 50; at this time the acetone bodies are being produced in large amounts. The changes observed seem too great and sudden to be the result of starvation alone. When this condition appears, abortion seems to be the only treatment which is of any avail, and rapid improvement is to be expected from it in the great majority of cases. Attention is drawn to the great scarcity in the literature of adequate analyses of the urine in this disease, especially in regard to the output of acetone bodies.

Acute Infective Polyneuritis.—It is held by Bradford and his associates that so-called acute febrile polyneuritis is a very definite entity, capable of being separated clinically from other diseases of the nervous system. It is a diffuse affection of the nervous system affecting the spinal cord, spinal ganglia, and peripheral nerves, with but a slight incidence on the cortex. The lesion is essentially one affecting the nerve elements, cells, and fibers. The malady can be transmitted experimentally from man to the monkey, and the characteristic lesions reproduced in the experimental animal. A living virus can be shown to be present, both in the human cases and in the inoculated monkeys. The clinical and pathologic features of the disease have been reproduced in monkeys by the subdural inoculation of the emulsion of human cord preserved from twenty-five days to seven months in glycerin, and also by direct inoculation from monkey to monkey of emulsion of the fresh cord or of cord preserved in glycerin and, moreover, by the inoculation of the pure culture. These facts, together with the apparently definite incubation period of from five to six weeks, lead the authors to the conclusion that this is a specific infective disease of a gradually ascending nature from the nerves to the entire nervous system. Pathologically, it appears to be distinguishable from acute anterior poliomyelitis, although closely allied to it, and suggesting that this term and those applied to other hitherto obscure diseases of the nervous system (Landry's paralysis, acute ascending paralysis, polioencephalitis, and yet others) may ultimately be found to cover or be overlapping designations for a group of closely allied and infective diseases of the central nervous system.

Archives Médicales Belges, Paris

November, 1918, **71**, No. 11

*Maintaining the Balance in the Circulation after Wounds of Vessels. P. Derache, J. Voncken and others.—p. 489.
*Sequels of War Abdominal Wounds. M. Stassen.—p. 507.
*Tube Casts in Urine. H. Denoncin and L. Gillet.—p. 523.
*Earning Capacity with Traumatic Cataract. E. Rasquin.—p. 527.
*The Question of Rheumatism. F. John Poynton.—p. 533.
Radiography of Normal Spine in Different Positions. A. de Marneffe.—p. 541.

Necessity for Maintaining the Balance in the Circulation.—Derache and his co-workers had occasion to ligate an artery or vein or both in forty-eight among their 7,914 cases of war wounds of vessels in different Belgian hospitals. They refer only to cases of definite ligation when there is no other chance of arresting the tendency to secondary hemorrhage. They say that the ligature should always be supervised with extreme vigilance as infection is liable to intervene; the wound itself and the temperature curve must be carefully watched. It is advisable to bury both stumps of the artery in muscle tissue as an extra precautionary measure; adhesions may then form with solid cicatricial tissue, reenforcing the other measures. After ligation of an artery, the blood passes on its way through collateral branches and these pass the blood on into the vein and into the venous collaterals. The balance of the circulation, the balance between the arterial and venous flow, is thus upset, and nothing happens to remedy it as there is no stimulus for formation of new venous collaterals. Therefore they advise as an indispensable complement of ligation of an artery that the vein should be ligated at the same time. By this means, as the arterial collaterals develop and enlarge from the extra functioning, the venous collaterals develop and enlarge to correspond, and the balance in the circulation is maintained. Whatever the injury of the blood vessels, when ligation is required, the vein must be ligated along with the artery. The obstacle to the passage of the venous blood favors the nourishment of the region, as the blood is kept longer in contact with it, and the tension of the blood is increased. The passage of the blood is thus in accordance with the normal balance between the arteries and the veins, and the arterial blood is not drained away too rapidly by aspiration into the main vein.

Sequels of Abdominal Wounds.—Stassen emphasizes that even after a man wounded in the abdomen has weathered the cape of the evacuation hospital and is apparently entirely cured, yet he is by no means out of danger. It is only exceptionally that full physical capacity is regained. His observation of five war *laparotomisés* with an interval since of three years, seventeen with two years and eight for more than one year has demonstrated that eventration, visceroptosis, disturbance from adhesions and the flaring up of a latent chronic peritonitis lie in wait for these men, and it is rarely that they escape one or more of these. In 10 per cent. an emergency laparotomy has been required since, and nearly 33 per cent. have eventration. Four cases showing the different types of secondary disturbances are related, and the degree of incapacity for each type is evaluated. Among his thirty cases, twenty had to be trained in a new trade or business, one that would make less physical demands on the abdominal wall than the man's former occupation. The new trades were in leather working, mechanical drawing, printing, electricity and wireless telegraphy, furrier, tailor or domestic servant.

Tube Casts.—Denoncin and Gillet affirm that tube casts are usually of greater import for diagnosis and prognosis than the albumin in the urine. They may occur before any albumin appears, and they may outlast the albuminuria. Tube casts, especially epithelial casts, are a more constant sign than albumin of injury of the kidney in the course of infectious disease or chronic interstitial nephritis. The quantity of the casts is also an index of the severity of the disease or toxic action affecting the kidneys. They insist that the tube casts should be investigated as well as the albumin in the urine before attempting treatment with arsphenamin or vaccines.

Traumatic Cataract.—Rasquin remarks that traumatic cataract in soldiers has often become spontaneously corrected, but when resorption is not complete he advises intervention. The evaluation from an industrial standpoint is the same as for aphakia. In any event, the evaluation done soon after the accident requires correction by a reexamination later.

Rheumatism.—Poynton declares that the study of heart disease should begin with the study of the infectious disease in childhood responsible for the heart lesions, before cicatricial changes have become definitely established. We cannot cure them when once developed, but cannot we do more to prevent their developing? He has been able to induce in animals, with streptodiplococci isolated from cases of acute articular rheumatism, not only multiple arthritis but pericarditis and endocarditis, not once but many times and with different species of animals. With acute rheumatism in children, the character of the food does not seem to have much influence; cold and dampness do not induce the disease but may predispose to it, and may render its course chronic and incurable.

Bulletin de l'Académie de Médecine, Paris

Jan. 21, 1919, **81**, No. 3

Influenza in Albania. G. Heuyer and P. Caillé.—p. 58.
*Pseudodiphtheria Bacilli. L. Martin and G. Loiseau.—p. 73.
*Herxheimer Reaction to Quinin in Malaria. Autric.—p. 78.
*Fly Killers. G. Boyé and R. Guyot.—p. 80.
*Caries of Upper Incisors. L. Dubreuil-Chambardel.—p. 84.
General Procain Anesthesia by Intraspinal Injection. Riche.—p. 86.

False Diphtheria Bacilli.—Martin and Loiseau acknowledge that when there are false membranes in the throat it is of little import whether the bacilli are of the true or false diphtheria bacilli type. But when it is a question of carriers, then it is extremely important to distinguish between the dangerous and the harmless bacilli. The false diphtheria bacilli do not kill guinea-pigs, do not produce toxins, and do not induce production of an antiserum. They grow only on the surface of the culture medium, and they do not turn it red as does the true diphtheria bacillus when the medium is tinted blue with litmus. Martin and Loiseau use test tubes 6 cm. deep, partly filling them with a 30 per thousand gelose. Then 3 gm. of glucose is dissolved in 200 c.c. of distilled water and 30 c.c. of tincture of litmus is added. The gelose is liquefied by boiling, then cooled to 50 C., and 5 c.c. of the litmus-glucose solution, after filtering through a candle, is added to the test tube and agitated till well mixed, after heating to about 50 C. The tubes thus prepared are tested for their sterility by keeping at 37 C. for twenty-four hours. The tube is then heated in the water bath and cooled to 50 C. and then inoculated with the broth emulsion of the bacilli to be tested, taken from a well isolated serum colony. By the eighteenth hour the tubes with true diphtheria bacilli have turned red, and colones can be seen throughout the depths of the tube, nothing on the surface. With the pseudodiphtheria bacilli, there are numerous colonies on or close to the surface, none in the depths, and the tint persists blue.

Herxheimer Reaction from Quinin in Malaria.—Autric relates two cases of malaria dragging along for several months in which the severe daily febrile attacks stopped immediately when all quinin was suspended. In one case the attacks did not return at all; in the other not until after five days. He explains such phenomena as a kind of Herxheimer reaction, and warns to be on the lookout for it. He is the médecin principal of the navy, and his experience at Madagascar and elsewhere has convinced him that the graver the form of malaria, the more cautious we must be in administering quinin.

Fly Killers.—Boyé and Guyot describe extensive research on ways and means to abate the fly nuisance. The practical conclusions are that castor oil and arsenic are the best fly killers. Castor oil containing a little sugar attracts the flies, and they die in and around it. Its action is enhanced by adding 20 drops of croton oil to 30 gm. of the castor oil. The fly dies almost instantly, while the oil is not dangerous for man. The odor of sugar and the odor of decomposing milk, flesh, or blood, seem to attract flies most powerfully.

Caries of Upper Incisors.—Chambardel calls attention to a form of caries which seems to attack simultaneously the four incisors in the upper jaw. He has encountered forty cases, all beginning at about the age of 14. There seems to be some anatomic deficiency in the bone rendering this group of teeth less resistant.

Jan. 28, 1919, **81**, No. 4

*Surgery on Children. E. Kirmisson.—p. 91.
Pfeiffer Bacillus Bronchopneumonia. P. Menetrier.—p. 99.
*Prevalence of Rabies in France. H. Martel.—p. 108.
*Public Health During German Occupation. A. Calmette.—p. 120.
*Bone Grafts. P. Mauclaire.—p. 126.

Operations on Children.—Kirmisson emphasizes the different character of surgery on children during the different periods of childhood, that is, under 5, between 5 and 13, and from 13 to 15. His statements are the results of his experience as the incumbent of the chair of children's surgery, founded for him in 1901. Among the points to which he calls special attention is the predominance of invagination of the bowel in infants, usually breast fed and well nourished. This should be suspected whenever in the midst of good general health an infant presents signs of occlusion of the bowel with bloody mucus in the stools. Strangulated hernia is rare in children over 5 but he has had 118 cases in children younger than this; nearly 50 per cent. were in infants less than a year old, including several less than a month old. The strangulation is unmistakably due to spasm, as also the invagination of the bowel in nurslings.

Another special feature of surgery on children is the predominance of fractures of the legs, instead of fractures of the arms, in younger children. In infants learning to walk the femur fractures with remarkable ease. Evidently muscular contraction is a factor, as the fracture occurs almost always in the middle portion of the bone, where the drag of the muscles tends to exaggerate the normal curve of the femur. Although the knee did not suffer from the traumatism, an effusion develops in it—an important aid in the diagnosis of fracture of the femur in an infant. In six recent years he had seventy-six cases of fracture of the femur in children under 5, and nineteen in children above this age, with sixty fractures of the femur and 108 of the arm in children over 5.

This same predominance of the femur in children under 5 is equally noticeable with osteomyelitis. The femur was affected five times more often than the tibia in children under 5 (twenty-one to four), while in older children the tibia was involved in forty-three and the femur in only thirty-two. In infants, the soft parts of the thigh are so thick in comparison to the bone that osteomyelitis of the femur is revealed only by a little swelling and may long escape detection. In older children the staphylococcus is generally responsible for the osteomyelitis, while in infants the streptococcus is more often to be incriminated, especially in the large abscesses in the shoulders and thighs of infants. In the thigh they may entail dislocation and this may suggest a congenital luxation when seen later unless the discovery of some small scar on the thigh or gluteal region gives the clue to the diagnosis.

Surgical tuberculosis in infants is generally superficial, restricted to the skin, as if the tubercle bacilli had been sown over the surface of the body. Hence result the glandular lesions in the neck, the diffuse lesions of the bones of the face and skull, and the multiple and symmetrical lesions of the small long bones of the hand and foot. It is in infants, moreover, that we more often meet with tuberculous lesions of the testicle. French clinicians seem to be unanimous on this point, and Kirmisson's experience has confirmed it. Malignant tumors in children over 5 are of the osteosarcoma type as a rule. But it is in infants that we find cancer of the eye, glioma of the retina, and cancer of the testicle or kidney. He warns that hematuria very seldom occurs with cancer of the kidney. The latter may be developing for a long time before any functional disturbance calls attention to it.

The surgical affections of children from 13 to 15 are mainly those affecting the locomotor apparatus, scoliosis, genu valgum, valgus flat foot and coxa vara. These may be encountered also in children under 5 but they have special characteristics in adolescents. The pain and contractures with valgus flat foot—*tarsalgie des adolescents*—do not seem to be ever encountered in children under 5. When a child of 4 or 5 has valgus flat foot, with more or less contracture, it will almost invariably be found to be the manifestation of a tuberculous process in the tarsus. A special feature of these bone deformities in adolescents is the great contrast between the poor and the well-to-do. Among the latter, tarsalgia is extremely rare while it is extremely common among lads just taking up work in trades, obliged to stand many hours at their work, possibly strained besides by carrying loads. They had no symptoms of the kind while they were at school; the tarsalgia first appeared after 13, when the boys left school and went to work. Kirmisson concludes by urging that school attendance should be compulsory till the age of 14, and that the working day should not be over eight hours.

Rabies in Dogs in France.—Martel relates that the strict measures against rabies in Paris resulted in a drop from 846 cases in 1901 to three in 1913. The abandonment of their dogs by refugees and the absence of veterinarians, drawn into the war, have resulted in a recrudescence of rabies. In 1918 there were 411 rabid dogs killed in Paris, and there were four cases of rabies in man, and 350 persons taking the course of treatment at the Pasteur Institute at Paris. The ordinances in regard to keeping dogs muzzled and on a leash are not heeded now by the public, and in 1918 throughout France 1,602 persons were bitten by rabid dogs, cats, cattle or sheep, with seven deaths, while 3,142 cases of rabies in dogs were reported.

Stunting of the Growth of the Young at Lille During the German Occupation.—See Paris Letter, page 742.

Bone Grafts.—Mauclaire has been much gratified at the successful outcome in seven of twenty-three cases in which he implanted a long segment taken from the fibula or other bone to bridge a gap in a long bone. He cuts the ends of the graft pointed and works them into the marrow cavity of the stump above and below. There must be an interval of several months before the grafting operation is attempted after the healing of the wound. If there was suppuration, six months at least must be allowed for the focus to become aseptic. He has compiled 128 grafting operations for war wounds. In nearly every instance an autograft was used, and seventy-two are reported as successful. It is evident, however, that a certain number of unsuccessful cases have not been published. In his own twenty-three cases, conditions were unfavorable in some, the skin very thin, and cicatricial tissue in the depths of the wound not offering very favorable chances for success. Sometimes an Italian grafting operation might prove useful to supply healthy skin under which to place the bone graft. He adds that Ollier's method of bone-periosteum grafts are of easier application. This technic was applied by the Japanese during their war with Russia in 1908. In the present war, Delagenière and Dujarrier have reported a number of successful cases with it. In one case Mauclaire surrounded the segment graft with a flap of bone-periosteum graft, thus combining the two methods. He gives an illustration of one case kept under roentgen supervision for two years. The bone segment did not become devitalized; it is living, and it has become very much hypertrophied. The graft was implanted to repair a loss of substance in the tibia; it has kept its shape and has not become porous. In another case the graft implanted in the radius became atrophied and deformed by the end of the second year. Probably the nourishment of the bone was defective.

Journal de Médecine de Bordeaux

Jan. 15, 1919, **90**, No. 1

Case of Abscess in Lung. Creyx.—p. 3.
*Spinal Anesthesia. H. L. Rocher.—p. 5.
*Osteosynthesis. Charbonnel.—p. 8.
*Training Troops to Walk in Water. P. Nadal.—p. 14.

Spinal Anesthesia.—Rocher has applied this method of anesthesia in 250 cases of war wounds and extols its advantages when lesions in the air passages render inhalation anesthesia inadvisable. It is ideal when, for other reasons, the patient is compelled to lie prone, and when extreme relaxation of muscles is desirable. It has been his experience that it reduces the shock with long or difficult operations, but in four cases he witnessed severe nervous shock come on from five to fifteen minutes after the anesthesia, but these men had grave septicemia or gas gangrene. This renders this technic dubious when the infection or intoxication is exceptionally severe. He reviews his experiences and the technic in detail, including eighty-seven peace time operations and 163 after war wounds.

Osteosynthesis.—Charbonnel comments on the increasing vogue of osteosynthesis as the danger of opening up a closed fracture does not exist with war wounds, as they are all compound fractures. The aim is to reconstruct the bone out of the fragments, fitting them into place as perfectly as possible and binding the whole into a sheaf by tying a wire around them. This prevents fragments of bone being pulled out of place by contraction of muscles. Fourteen cases of primary osteosynthesis are described to show its advantages, and he discusses further the field of early secondary osteosynthesis and of the same done tardily for old fractures, defective consolidation, and pseudarthrosis with or without suppuration.

Walking in Water.—Nadal urges training soldiers to walk through a running stream and walk entirely submerged for certain stretches. With a little training, he says, troops can thus accomplish the crossing of a river over 90 feet wide and not much over 9 feet deep, each carrying a load weighing from 66 to 88 pounds.

Paris Médical

Jan. 25, 1919, **9**, No. 4

*Nephritis with Inherited Syphilis. V. Hutinel.—p. 65.
Trench Fever. Baudouin.—p. 73.
Autochthonus Balantidian Dysentery. Weil and Bergouiguan.—p. 76.

Nephritis with Inherited Syphilis.—Hutinel warns that mercury does not seem advisable in treatment of the nephritis with inherited syphilis. He has even witnessed hematuria follow mercuric inunctions, and consequently he refrains from mercury in treatment of nephritis with suspected inherited syphilis. Intravenous injection of an arsphenamin preparation is now his procedure. The diuresis increases and the general condition improves, but we must not expect rapid improvement or a definite cure. These can be counted on only when treatment is begun in the early stage, while generally the nephritis is far advanced and cicatricial tissue has formed at some points. However, the nature of the syphilitic affection in these cases, restricted to circumscribed regions, allows better hopes of a cure than with ordinary nephritis. In any event, the kidneys should be spared as much as possible. The inconsiderate use of excessive quantities of salt and nitrogenous foods is liable to bring exacerbations. This was evidently responsible for the successive outbreaks of symptoms in some of the cases he describes. The nephritis was of an acute type in several, including an infant of 19 months and boy of over 4. Examples of the chronic form are also described in a boy and girl of 11 and 13, and a man of 50. In some other cases in this group the chronic nephritis first became manifest after purpura or mumps or infection with tuberculosis. The nephritis does not assume any special type; in fact, the condition is not so much nephritis as it is that the renal reactions are modified by the specific infection. The kidney symptoms develop after such slight causes that we hesitate to incriminate them, a little redness in the throat, an intestinal affection or mild purpura or influenza. The fact that the kidney develops symptoms testifies to a special lack of resisting power. The albuminuria is usually out of all proportion to the functional disturbances; there is little tendency to edema and the blood plasma is nearly normal. Hematuria is not so frequent as in tuberculosis, but the tendency to relapse is the same, and hemoglobinuria is not rare. The nephritis passes into a chronic phase by successive *poussées*. Uremic manifestations are rare and tardy. Treatment of an underlying inherited syphilis may have a very favorable action on kidney disorders in children in particular.

Presse Médicale, Paris

Jan. 27, 1919, **27**, No. 5

*Trigeminal Paralysis. L. Testut and L. Marchand.—p. 37.
*Military Service After Wounds of Brain. Laignel-Lavastine.—p. 38.
Voltaic Vertigo with Skull Wounds. R. Dubois and A. Hanns.—p. 40.
*Precision with Wassermann Reaction. Mathis and Labougle.—p. 41.
*Prolonged Use of Heart Tonics. G. Galli.—p. 43.

Trigeminal Paralysis.—In Testut and Marchand's case the paralysis involved both the sensory and the motor trigeminal fibers. It was a sequel of cerebrospinal meningitis. The young man first noticed that something was wrong when he found that he was cutting himself constantly when he shaved the right side of his face. The progressive paralysis of the muscles of mastication and the anesthesia reached their height in eleven months, and then slowly improved to some extent. He also has attacks of pain at times, spreading to the back of the neck and the occipital region.

After Wounds of the Brain.—Laignel-Lavastine discusses different types of what may be encountered in men who have been wounded in the brain. He emphasizes the imperative necessity for placing such men in the hands of skilled experts with authority to keep the case for the treatment deemed desirable, and to determine his return to military service or not, unhampered by red tape. The pure psychoneuroses do not entitle to a discharge from the army.

The Wassermann Reaction.—Mathis and Labougle have slightly modified the technic advocated by Calmette and Massol, as they describe in detail. They laud it as a reliable, easy and precision method. With this more accurate technic, they found the response constantly negative with malaria, leprosy and Vincent's ulceromembranous stomatitis.

Prolonged Use of Heart Tonics.—Galli remarks parenthetically that we are accustomed to take 10 or 15 cg. of caffein in our cup of coffee every day. He does not know of any one who has taken up to 700 gm. of a 10 per cent. solution of tincture of strophanthus in the course of two years except the man of 50 whose case is described. He had mitral insufficiency and hypertrophy of the heart, well compensated, and had been taking 20 drops of the tincture daily for two years, on a physician's prescription. The latter had told him he would have to keep up heart tonics all his life.

Jan. 30, 1919, **27**, No. 6

*Vaccination against the Streptococcus. C. Levaditi.—p. 49.
Retrograde Peristalsis in Colon. P. Lignac.—p. 52.

Vaccination Against the Streptococcus.—Levaditi reviews the experiences with treatment of war wounds with a sensitized autogenous vaccine and also with lipovaccines and ether-sensitized vaccines. The work was done at the Virval Belgian ambulance, in charge of Professor Depage. Six tables are given to show the results in different classes of wounds, and with these different types of vaccines. The efficacy of the vaccine is shown most conclusively, perhaps, by the fact that in wounds of soft parts known to be infected with streptococci and requiring further operative measures, after the vaccine had been given, the wound healed smoothly without infection in 95.5 per cent. of the cases. This success surpasses the 93.5 per cent. successful cases among those known to be free from streptococci. With the vaccine to supplement the other measures, results as satisfactory are obtained with streptococci infection as without it except that healing takes longer. Generally, from twenty to sixty days in the graver cases are required before the wound can be definitely sutured. The dose of vaccine is 0.5 or 1 c.c. injected into the deltoid muscle and repeated every five or six days or alternate sides. The twenty-four hours broth culture of hemolytic streptococci is centrifuged and the sediment, in suspension in 10 c.c. of isotonic salt solution, is mixed with 4 c.c. of a mixture of ether and chloroform in equal parts. After twelve hours the ether-chloroform is decanted, and the suspension of the microbes is mixed with 4 c.c. of antistreptococcus serum. After four hours of contact at 38 C. the whole is centrifuged and the sediment is suspended in 10 c.c. of saline. After testing for sterility, it is injectable in the dose of 0.5 or 1 c.c. The intradermal test proved very instructive, the reaction being found most pronounced in the cases tending to healing, testifying to a vigorous defence on the part of the organism. In the cases of grave septicemic infection there was little or no local response to the intradermal test, hence the response to the test is a useful guide as to when the wound can be safely sutured.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 1, 1919, **49**, No. 5

*The Lumbago Question. D. Pometta.—p. 129.
Changes in Hair and Nails after Influenza. L. Merian.—p. 139.
Household Surgery in Switzerland. G. A. Wehrli.—p. 144.

Lumbago.—Pometta is chief of the Swiss accident insurance infirmary, and he here discusses some cases of lumbago in which there was a possibility of a traumatic origin. He regards lumbago as of rheumatic nature in the majority of cases, and even those in which a traumatic factor is concerned, are usually "traumatic" only in the medical sense and not from the insurance standpoint. The lumbago, however, usually comes on in a way which convinces the subject that it is of traumatic origin, but the activation of muscles and joints by early resumption of work is of great benefit unless the roentgen rays show actual injury of the bone. There are no objective findings with lumbago as a rule. Hematoma and swelling in the depths of the tissues generally escape detection; when such are found, they indicate a superficial and hence a milder lesion.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 12, 1919, **40**, No. 4

Treatment of Malaria. L. Carmelo.—p. 29.

Jan. 16, 1919, **40**, No. 5

War Fractures of Femur. E. B. Tay.—p. 34.

Riforma Medica, Naples

Jan. 11, 1919, **35**, No. 2

Electric Treatment of Functional Mutism and Aphonia. V. Desogus.—p. 26.
*Gangrene from Gassing. C. Silvan.—p. 28.
*Hematoma in the Ear in the Insane. A. Romano.—p. 30.
Present Status of Intestinal Sutures. E. Aievoli.—p. 32.
After the Victory. A. Ferrannini.—p. 37.
Protection of Motherhood and of Children. G. Tropeano.—p. 38.

Gangrene in the Gassed.—Silvan recapitulates the disturbances in the cardiovascular apparatus that have followed gassing with yperitis, the mustard gas. They include hematuria, gastrorrhagia, cyanosis of the extremities and purpura from the penetration of the toxic gases into the organism. In a case described, ischemic gangrene of the right arm compelled amputation, but the lungs were too badly damaged for recuperation, and the robust man died three weeks after he had been gassed.

Hematomas in the Ears of the Insane.—Romano has compiled seventeen articles dealing with what he calls otohematomas and their frequency in the insane. In a case described, periauricular blood cysts developed, apparently vicariously for an otohematoma, in an insane soldier of 34. These otohematomas are found in the insane with nervous disturbances, vasomotor or bulbar phenomena. They are a sign that recovery is doubtful and recurrence probable as they indicate an unstable vasomotor system.

Feb. 1, 1919, **35**, No. 5

*Malaria, Quinin and Influenza. A. Roccavilla.—p. 85.
The Urine in Influenza. I. Iacono.—p. 88.
Shell Wound of Heart with Recovery. M. Mauro.—p. 89.
*Manifestations in Eye and Skin with Nervous Disease. S. Gavazzeni and A. Jona.—p. 90.
Radiotherapy for the Eyes. N. Scalinci.—p. 92.
*Epidemic Encephalitis. G. Molinari.—p. 93.
Shape and Statics of Stomach. E. Aievoli.—p. 94.

Malaria, Quinin and Influenza.—Roccavilla regards it as significant that only twelve cases of influenza developed among 1,500 malarial patients deeply under the influence of quinin. The disease was exceptionally mild in those affected. He accepts this as testifying to a more or less protective action from the quinin. After the disease is once under way, quinin does not seem to modify it.

Eye and Skin Symptoms in Nervous Disease.—Gavazzeni and Jona noticed in certain cases a monocular divergent strabismus, most pronounced in the spontaneous movements of rotation of the eyeball. Either eye may be affected, and the intensity of the deviation always corresponded to the gravity of the cases in their experience. This symptom was present in 20 per cent. of their cases of nervous disorders bordering on psychoses or with cyclic recurrence. It is important both for diagnosis and prognosis. They also noted in many cases of minor nervous disturbances with a constitutional base, that the abdomen showed a number of spots like freckles, but the surface was slightly verrucous. They were generally grouped in the lowest intercostal space, with some scattered toward the stomach and umbilicus region. They accompanied the neuroses and subsided with them to a certain extent. The writers venture the suggestion that the suprarenals may be responsible for this skin symptom. The persons affected were usually hyposthenic and inclined to lassitude, and the spots became more pronounced during periods of depression.

Epidemic Encephalitis.—Molinari presents the actual status of this subject as it has been studied in France, Uruguay and Great Britain. No definite conclusions are possible as yet.

Rivista Critica di Clinica Medica, Florence

Nov. 23, 1918, **19**, No. 47

Localization of Foreign Bodies by Horizontal Displacement of Tube. E. and E. Pittarelli.—p. 553. Cont'n.

Dec. 21, 1918, **19**, No. 51

*The Food in Austria during the War: Effects of the Restricted Diet. L. Castaldi.—p. 601. Commenced in No. 49, p. 577.

The War Diet in Austria.—Castaldi was long a prisoner of war in Austria, and he made a special study not only of the food of the war prisoners but of the Austrian army and of the civilian population in the different regions he was able to investigate. He found in his own person that the organism adapts itself remarkably to an unaccustomed diet. While at one prison camp, the food averaged only 1,300 calories, as he describes in detail, and he suffered from anemia and reduced capacity for both physical and mental work; his memory in particular became impaired. But when he was transferred to Bistritz he received a total of 1,800 or 1,900 calories daily, and he soon recuperated and reached a stable balance, so that he felt physically normal. With 2,000 calories or a little less, the men in the prison camps kept up vigorous exercise, tennis, football and other sports in the best of health, demonstrating that this ration is sufficient for the ordinary occupations of civilians. Below 1,700 calories, the ration is absolutely insufficient, and the food supplied by the Austrians to their Italian prisoners of war was far below this figure for most of the time.

Cronica Medica, Lima

November, 1918, **35**, No. 665

History of War Surgery in Peru. F. Leon y Leon.—p. 324.
Pathologic Anatomy of the Spleen. O. Hercelles—p. 339. Conc'n.

December, 1918, **35**, No. 666

*Bronchopulmonary Spirochetosis. R. E. Ribeyro.—p. 351.
Case of Hodgkin's Disease. E. Odriozola.—p. 355.
*Trachoma in Peru. B. Burga.—p. 360.
*Influenza in Rio de Janeiro. E. Escomel.—p. 367.

Bronchopulmonary Spirochetosis.—Ribeyro publishes the second case of this disease kn[illegible] Peru. Th[illegible]tient was a Japanese of 30 who had [illegible] ing at I[illegible] eight years. The p[illegible]e diag[illegible] been p[illegible] tuberculosis, but the microscope showed the sputum swarming with spirochetes and no tubercle bacilli. Fever, cough and bloody sputum developed suddenly but the storm blew over in about a month. By the end of the month only a very few spirochetes could be detected, and there was scarcely any expectoration, the general health becoming satisfactory.

Trachoma in Peru.—Burga's figures give the number of cases of trachoma at the eye infirmary at Lima during the last nine years as ranging from five in 1910 to fourteen in 1916. Almost all the cases are imported. In the four cases during 1914 there was inherited or acquired syphilis in two. tuberculosis in a third, and the fourth man was a miner.

Influenza in Rio de Janeiro.—Escomel was on a visit to Rio when influenza broke out there, the first cases being ascribed to infection from the same steamship from Spain which passed on to Buenos Aires where also the epidemic followed in its wake. Within five days half a million of the people in Rio were affected, and all business and traffic were paralyzed. As the usual supplies from the provinces were thus cut off, there were no meat, milk, eggs or poultry to feed the sick. The schools were turned into hospitals, most of the drug stores closed for lack of drugs and clerks, and the government opened stations for free aid. The convicts in the prisons had to be called on to dig the graves as corpses were brought in such numbers. On one day there were 1,000 deaths. The physicians did heroic work; twenty-seven died within ten days. Of the 200 physicians who gathered at the opening meeting of the Medical Congress to which Escomel had come as a delegate, only thirty-two were present at the closing meeting, the others being sick, but there were no fatalities among the foreign delegates, but unfortunately the same cannot be said of the Brazilian contingent. The offers of the foreign delegates to assist in the hospitals were declined by the authorities. The epidemic seemed to be more deadly the nearer to the equator, growing milder farther south. Even at its height, there were never more than 200 or 300 deaths in one day at Montevideo or Buenos Aires. The epidemic was also milder on the Pacific Coast. In Peru, although there were 5,000 cases at Arequipa, yet few were fatal. Escomel adds that the disease seemed exceptionally virulent at Rio, as was evident by the way it attacked the foreign delegates and the 650 sailors of the U. S. cruiser *Pittsburg* in the harbor, 117 of whom died, according to press reports.

Gaceta Medica de Caracas

Dec. 31, 1918, **25**, No. 24

*Treatment of Leprosy. M. R. Casabó.—p. 261.

Treatment of Leprosy.—Casabó was a delegate from the Venezuela Academy of Medicine on the committee appointed to investigate the claims made by A. Garcia for his method of treating leprosy. As already mentioned in The Journal, the verdict of the committee was unfavorable.

Medicina Ibera, Madrid

Jan. 4, 1919, **6**, No. 61

Hemianopsia; Three Cases. E. F. Sanz.—p. 1.
*Prolapse of Rectum in Children. A. Sierra.—p. 3.
Case of Choledochotomy plus Cholecystectomy. C. Roe.—p. 3.

Prolapse of Rectum in Children.—Sierra expatiates on the evils of attempting surgical measures of any kind for prolapse of the rectum in children. It occurs only from straining, from diarrhea, from helminths and from disease in the large intestine, and only in children debilitated or naturally delicate. Removal of these causes corrects the tendency to prolapse. In one case recently the prolapse persisted under all treatment until santonin was given. After expulsion of a number of helminths, conditions in the rectum returned to clinically normal. Electricity and local injections of strychnin or ergot are not of much use, but the child should be trained to defecate in a way to reduce the strain on the rectum, lying on the side, if necessary for this.

Jan. 11, 1919; **6**; No. 62

Nephritis. S. Pascual.—p. 21. To be cont'd.
*Hysteric Bilateral Amaurosis. M. Guijarro.—p. 26.
Social Defence of the Public Health. F. Murillo.—p. 47. Conc'n.

Hysteria Amaurosis.—Guijarro's patient was a young woman who had never presented appreciable signs of hysteria and the family was normal. The bilateral amaurosis developed suddenly after emotional stress—passing under the tree where her brother had hanged himself not long before. Deafness accompanied the amaurosis at first but soon subsided. The vision improved under suggestion but several months elapsed before recovery was complete.

Revista Medica, Puebla, Mexico

Jan. 15, 1919, **1**, No. 6

*Amputation of Eyeball. A. T. Estrada.—p. 121.
*Vaccine Therapy of Influenza. F. Paz.—p. 128.
Prurigo in Mexico. J. G. Urueña.—p. 129.
*Panautogenous Vaccines. T. G. Perrin.—p. 131.
Blackwater Fever. (Aguas negras.) T. Lopez.—p. 133.

Amputation of Eyeball.—Estrada gives directions for amputating the posterior segment of the eyeball to improve conditions of the stump for the wearing of an artificial eye after enucleation.

Autogenous Vaccines.—Paz presents evidence to prove that Kraus' method of preparing a vaccine from the patient's sputum is theoretically impracticable and is dangerous. Perrin answers some of Paz' statements saying that he never witnessed any phenomena suggesting infection after intraperitoneal injection of these panautogenous vaccines or antitossinas, as Kraus calls them. At the same time he personally prefers vaccines prepared by the Wright or Besredka technic.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

September, 1918, **26**, *No. 9*

Influenza. G. André (Toulouse).—p. 394; F. Duprat (Bagnères).—p. 419; N. Fiessinger (Paris).—p. 425.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 14, 1919, **122**, No. 1538

*Reconstruction of Angular Fractures. Villa-Zeballos.—p. 33.

Reconstruction of Fractured Bone.—Zeballos has been highly gratified by the way fractured bones with overlapping and diverging ends and fragments heal under the technic he describes with illustrations. It reduces the traumatism of the bone and periosteum to the minimum, while insuring the best possible conditions for repair. He ascribes the method to Gentil of Orleans. A metal bridge spanning the area of the fracture carries a small frame in which fits a long perpendicular screw. The frame bridges the area of the fracture and the screw is turned until it fits against the overlapping stump and pushes it down into place with gentle force. A bronze wire passed around the sagging stump and tied over the metal bridge lifts up this stump into place. Force can thus be applied in two directions from the horizontal bridge, and the force can be graduated to fit the changing conditions each day. The bridge permits lengthwise traction at the same time.

Revista de Psyquiatria, Lima, Peru

July, 1918, **1**, No. 1

Hypochondria in Eighteenth Century. Moreyra and Paz-Soldan.—p. 1.
*Mutism. L. D. Espejo.—p. 11.
*Infantilism. H. Valdizan.—p. 25.
New Phase of Psychology. H. F. Delgado.—p. 37.

Mutism.—Espejo describes among others three cases of familial deafmutism in the children of a syphilitic and alcoholic father and epileptic mother. He is inclined to incriminate the syphilis in these cases. The children spoke normally for their age until *chupos* are said to have developed on the head, probably, he says, external manifestations of inherited syphilis or possibly only boils. This occurred at the age of about 18 months in each child, and thereafter the children grew deaf and forgot all the little speech they had learned. Another little girl of 4 after an attack of malaria lost vision, hearing and the power of speech for a few days. Then vision returned, then hearing, and speech last, but with stammering and defective enunciation, and the child presents some tics. The mother was of a nervous temperament and had once had an attack of mutism lasting for three days. In the other cases of hysteric mutism described, the patients were young women and a woman of 52. One, notwithstanding complete mutism at other times, talked freely in her sleep. The complete recovery under hypnosis and suggestion reaffirmed the hysteric nature of the disturbances.

Infantilism.—Valdizan's five cases confirm the share of the endocrine system in the morbid tendency which is manifested by infantilism. All were young men except one man of 56. In most of them the phase of infantilism followed some severe sickness, and under tonics and organotherapy clinically normal conditions were restored in time. Two were brothers, and albuminuria was among the first symptoms. He accepts it as an indication of the onset of the pluriglandular disorder, initiated in the kidneys and spleen. This assumption is confirmed by the retrogression of this infantilism under a course of tonics.

October, 1918, **1.** No. 2

*Origin of Peruvian Indian Race. J. C. Tello.—p. 51.
*Education of Epileptics. E. P. Rodriguez.—p. 56.
*Chicha, an Alcoholic Peruvian Beverage. H Valdizan.—p. 62.
Extrapsychiatric Psychanalysis. H. F. Delgado.—p. 78.

The Origin of the Amueshas.—Tello relates a myth from the folk-lore of the Indians of Peru.

Training of an Epileptic.—Rodriguez had charge of the education of an epileptic boy of 10 and he describes how with medical supervision it has proved possible to improve conditions immeasurably for the child. The disturbance in speech and the tendency to left paralysis suggest organic brain disease.

Peruvian Alcoholic Beverage.—Valdizan was surprised to find that among the inmates of the general insane asylum only fourteen or fifteen had a history of excessive use of chicha, the national spirituous beverage, and in very few was the chicha alone responsible. This rarity of toxic mental disorders from abuse of chicha can be explained, he says, only by assuming that chicha is harmless as some maintain, or that it acts in a different way from the habitual agents of alcoholic toxiphrenias.

Semana Medica, Buenos Aires

Dec. 12, 1918, **25.** No. 50

*Surgical Treatment of Gastric and Duodenal Ulcer. R. Finochietto and R. F. Vaccarezza.—p. 699.
*Severe Hemorrhage from Graafian Follicle. D. A. Rojas and V. Widakowich.—p. 717.
Social Darwinism and Eugenics. R. Kehl.—p. 721.

Gastric and Duodenal Ulcer.—Finochietto and Vaccarezza analyze their experiences with seventy-five operative cases of ulcer in the stomach or duodenum. They give the details of a number of typical cases and expatiate on the importance of combining both medical and surgical measures; these do not conflict with but supplement each other. In hospital practice they operate in every case of chronic ulcer of stomach or the duodenum unless they are convinced that syphilis is a factor. In this case they give a course of specific treatment and if the results are not satisfactory, they operate, regardless of the syphilis although continuing treatment. In private practice they impose a rigorous medical course of treatment, not insisting on surgical measures until these fail. Gastroenterostomy is the operation of choice. With hematemesis they refrain from operating until a quiet interval. With subacute perforation, seen in the first twelve hours, they operate at once, but if over twenty-four hours have elapsed and the reaction of the wall is slight and the general symptoms mild, they order absolute local and general repose and defer the gastro-enterostomy until later. With acute perforation the operation must follow at once.

Hemorrhage from Rupture of Graafian Follicle.—Rojas and Widakowich retrospectively explain the case reported as a rupture of a congested follicle, a very rare occurrence. Neither in the ovary or tube were there any traces of an ovum. No large vessel was found open but a liter of blood was removed from the peritoneal cavity.

Dec. 19, 1918, **25.** No. 51

*Roentgen Diagnosis by Intravenous Injection. N. V. Greco.—p. 731.
Notes on Influenza. R. Cabrera and A. Segers.—p. 733.
*Sugar Treatment in Tuberculosis. J. S. Picado.—p. 741.
Nervous Complications of Influenza. Goñalons and Carulla.—p. 743.

Intravenous Injection in Roentgen Diagnosis.—Greco suggests the possibility of obtaining instructive information by injecting some opaque substance directly into the vein of the region. This method seems logical and practical as intravenous injection of metal salts is practiced by many now in treatment of various processes. He does not know that this method has been applied in the living to date, but his experience with rabbits seems to show its feasibility. In his experiences in vitro the salts of mercury cast the best shadows, but quinin hydrochlorid in a 0.10 per cent. solution was nearly as effectual and tartar emetic—which is used so extensively now by the vein—casts as clear shadows as the mercury salts. The dose of the quinin would correspond to a dose of 0.09 to 0.12 gm. for a person weighing 60 kg. Introduction of coloring substances seems to be especially promising as they diffuse throughout the entire body.

Sugar Treatment of Tuberculosis.—Picado gives a tabulation of the results in nine cases of pulmonary tuberculosis given systematic treatment by injection of sugar according to the Lo Monaco method. The results were disappointing, no benefit being apparent except that in a few the cough and expectoration diminished. In others, benefit and aggravation seemed to alternate; in one the sputum showed blood for the first time, and in another the blood stained sputum seemed unmodified. The blood serum showed no increase in the sugar content. The great advantage of this treatment is that the cough and expectoration may be reduced without injuring the stomach.

Siglo Medico, Madrid

Dec. 21, 1918, **65.** No. 3393

Syphilis and Salvarsan. E. M. Villapadierna.—p. 1033.
*Etiology of Cirrhosis of Liver. L. Urrutia.—p. 1035.

Etiology of Cirrhosis of the Liver.—Urrutia in looking over the records of sixty cases of cirrhosis in adults found abuse of alcohol in 35 per cent., but in thirty-nine alcohol could not possibly be incriminated. In 15 per cent. there was a history of chronic malaria. In four of the women no cause for the cirrhosis could be detected. In 5 per cent. of the total, syphilis may have contributed although one of the twelve in this group was a habitual drinker. Banti's cirrhosis seems to be anatomically identical with Laennec's cirrhosis; of the seven cases of this kind, none had a history of abuse of alcohol. Consequently it is incorrect to call Laennec's cirrhosis alcoholic cirrhosis.

Dec. 28, 1918, **65.** No. 3394

*Neurasthenia versus Uremia. C. Juarros.—p. 1053.
Congenital Gynatresia. J. E. Pallares.—p. 1054.
Differential Diagnosis of Appendicitis. T. Hernando y Ortega.—p. 1056. Commenced in No. 3390, p. 979.

Neurasthenia in Azouria.—Juarros applies the term *azouria* to a set of symptoms resembling diabetes insipidus but with abnormally large urea content of the urine and nervous disturbances. He reports in detail a case in a man of 48, a great smoker, with insomnia, loss of weight and nervous poise after a great grief. The symptoms suggested intense neurasthenia but examination of the urine showed oxaluria, indicanuria and 32.40 gm. urea to the liter. The absence of polyuria and of sugar in the urine excluded diabetes, and Juarros made the man stay in bed, on a milk vegetable diet, with lactic ferments and nerve tonics, brain organotherapy alternating with injectable nucleins and lecithin. Under this treatment the urea increased to 43.72 gm. per liter but the other symptoms showed improvement, and the urea also subsided to normal figures during the following month or so. After a period of comparative health the symptoms returned with the urea up to 37.80 gm. per liter.

Jan. 4, 1919, **66.** No. 3395

Aphasia with Acute Febrile Process. E. F. Sanz.—p. 4.
*Treatment of Prolapse of Rectum. A. Morales—p. 7.
*Vacuum Extraction of Cataract. V. Moerno.—p. 8.
Leg Ulcers. Sicilia.—p. 9.

Prolapse of the Rectum.—In Morales' case the extensive prolapse kept recurring in spite of various palliative operations. The woman had had [illegible] erous growt [illegible] in

1916 from the rectum. He conquered finally the tendency to prolapse by inducing cicatricial retraction as after a burn. After a purge, he had the woman keep on her feet for a time to obtain the maximum of the prolapse. Then he anesthetized the whole of the prolapsed mucosa with an 8 per cent. solution of procain, after which he applied the actual cautery, burning parallel stripes with it, from above downward, the stripes close together. After waiting a few minutes, the prolapse was reduced, handling it with gauze, and the patient kept quiet in bed for two days. This procedure was repeated three times, at intervals of six weeks. The outcome was a complete success, the patient now being in apparent good health, free from both cancer and prolapse.

Vacuum Extraction of Cataract.—Moerno relates that Barraquer of Barcelona now has a record of 630 cases of cataract which he has removed in the capsule by his method of vacuum aspiration. He does from fifteen to twenty operations of the kind each week. Simple extraction was done in 391 cases, the combined extraction in 289; with a conjunctival flap in 436 and with a suture in 194. Vision was left from 0.7 to 1 in 398; from 0.3 to 0.6 in 185; from 0.1 to 0.3 in 44, and 0 in 8. In the total 630 cases, 34 complications were encountered, hernia of the vitreous in 5; inversion of the flap in 2; rupture of the capsule in 3; luxation of the lens in 2; infection in 2; hernia of the iris in 5; hemorrhage in the anterior chamber in 3; impaction of the zonula in 4; iritis in 1, and hyphemia in 7. He calls the method facoerisis. It was described in The Journal, Dec. 8, 1917, p. 2006.

Jan. 11, 1919, **66**, No. 3396

*Cure of Rhinophyma under Radium. J. and S. Ratera.—p. 21.
*Morbid Constitutions. C. Calleja.—p. 22. Conc'n.
Treatment of Influenza. J. G. Castro.—p. 25.
Dermatologic Centers in New York. J. L. Carrera.—p. 28.
Inspiration and Therapeutics. B. H. Briz.—p. 29.

Subsidence of *Rhinophyma* Under *Radium*.—Ratera has been unable to find more than seven cases on record of radium treatment of rhinophyma, but his success in the case reported justifies its wider use. The radium was applied for twelve hours on four successive nights, by Degrais' technic, filtering through 2 mm. of lead the rays from 16.4 mg. of radium sulphate on a circular plate, 25 cm. in diameter. Three exposures were made forty days later, and two more after an interval of two months, to remove the last trace of discoloration.

***Morbid* Constitutions.**—The main points of Calleja's article were summarized in these columns, March 15, p. 837.

Hospitalstidende, Copenhagen

Dec. 11, 1918, **61**, No. 50

*Atypical Forms of Meningitis. F. Rydgaard.—p. 1713. Conc'n.

Atypical Forms of Meningitis.—Among the cases reported by Rydgaard are two in which an aseptic purulent meningitis in a boy of 3 and man of 28 was accompanied by diphtheria bacilli in the throat. It is possible that the toxic meningitis in the course of diphtheria may be comparatively frequent but escape recognition. He knows of only a few cases on record, including Reiche's three cases. Glaser has contended that diphtheria meningitis may develop with scarcely any manifestations of the diphtheria in the throat. Rydgaard's two patients were treated with an antimeningococcus serum, and recovery promptly ensued, but prompt recovery is the rule in this type of aseptic meningitis. In a third case of aseptic purulent meningitis the young woman had developed infectious sore throat but diphtheria bacilli were not involved, and the meningitis here also was evidently of purely toxic origin. The bibliography appended shows that an aseptic purulent meningitis may develop in the course of uremia or parotitis, or with lead or ptomain poisoning, after spinal cocain or stovain anesthesia, with infectious processes in the vicinity of the meninges, and with abscesses at the back of the neck. One case is on record in which a nonsyphilitic woman for several years developed aseptic meningitis every month in connection with menstruation. There is also a series of cases on record in which absolutely no cause for the aseptic meningitis was detected.

Dec. 18, 1918, **61**, No. 51

*Bacteriology of Lupus. A. L. Fønss.—p. 1745. Concluded in No. 52, p. 1777.
Present Status of Döhle's "Inclusions" in Scarlet Fever. F. Thorborg. —p. 1762.

Bacteriology of Lupus.—Fønss' report covers 25 cases of lupus, 3 of verrucous tuberculosis and one each of dubious diagnosis and scrofuloderma, a total of 29 cases. The tuberculin skin tests elicited reactions of the human type in 22; 11 gave the strongest response to bovine tuberculin and 9 to human tuberculin; in 2 cases the response was alike for both. He tabulates 103 cases from the literature in which bacteriologic investigation showed the human type in 81 and the bovine in 18. In Denmark about 14 per cent. are bovine cases to 86 per cent. human. The German figures are 12 and 88 per cent. and the English 48 and 52 per cent., respectively, while no bovine cases seem to have been published in Italy and France. In Fønss' three cases of typical bovine tubercle bacilli, the lupus was of a severe type but the progress of the lesions was arrested by Finsen light treatment and they healed over. In these and 14 similar bovine cases from the literature, the lungs, epididymis, glands and bones showed other manifestations of tuberculosis in 8 of the total 17. This also occurred in 12 of a total of 30 cases of the human tubercle bacilli type, typical in 10, with attenuated virulence in 17, and atypical in 3. In 11 cases of verrucous tuberculosis, the patients were all butchers, and in all the lesions were of bovine origin. In the other 4 cases there was no known contact with cattle and the affection was of the human type. The clinical course of lupus does not seem to depend on either type exclusively, mild cases and severe and extensive cases occurring with each. Simultaneous skin tests with both bovine and human tuberculin are unable to differentiate the infection from them. The literature on the bacteriology of tuberculous skin lesions is reviewed and the clinical details of the total 29 cases are given in full.

Hygiea, Stockholm

Dec. 31, 1918, **80**, No. 24

*Effluence from the Human Body. S. Alrutz.—p. 1393.

Effluence or Radiation from the Human Organism.—Sydney Alrutz is lecturer on psychology at the University of Upsala, and for years he has been compiling data for a large work on the dynamics of the nervous system, conducting experiments on the suggestibility, the motility, sensation and nervous energy in the waking and the hypnotic state. He here devotes sixty pages to the illustrated description of experiments which he asserts have apparently demonstrated the existence of a hitherto unknown radiation, effluence or emanation from the human organism which affects the sensation and muscular contraction in the human body exposed to it. His research was done on two persons who were readily hypnotized for the experiments, and also on a number of normal persons. There seems to be an emanation of some nervous influence from the finger tips as they are passed without contact over the body of the subject. This influence was evident in changes in the sensation and muscular contraction of the part of the body forming the field of the experiment, anesthesia, analgesia and muscular contraction being observed. This effluence seems to pass undiminished through a sheet of glass or metal but seemed to be arrested by cardboard and wool. The illustrations show the blindfolded, hypnotized patient as subjected to the various tests, the arm in a large glass box, for instance, or the effluence transmitted through a glass rod without actual contact. Alrutz found that the effluence can be reflected against a sheet of metal, and also be conducted through a rod bent at a right angle or twisted. Even pointing the finger, above the sheet of glass, toward a muscle or tendon was followed by the contraction of the muscle or tendon. He emphasizes the similarity of the phenomena thus induced and some of the phenomena of hysteria. The discovery of this emanation of nervous energy tends to throw light on the phenomena of hypnotism as the hypnotizer makes passes without direct contact.

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GENITAL DEFECTS AND VENEREAL DISEASES AMONG THE PORTO RICAN DRAFT TROOPS

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The calling to the colors of 12,000 men between the ages of 21 and 31, nearly all natives of Porto Rico, gave an opportunity to study the genital defects and venereal diseases, including syphilis, prevalent in one of the West Indian islands where syphilis is supposed to have had an early start.

Especial interest should be manifested in the report of syphilis among the troops, as evidenced clinically, and by the Wassermann reaction taken as a routine on bakers and cooks. The Wassermann reports were in accord with the clinical findings in every case of secondary syphilis, and in cases of primary syphilis in which the draining lymph nodes were enlarged. In the latent tertiary cases, negative Wassermann reports were returned in only six cases that treatment with mercuric salicylate in grain doses weekly for six weeks provoked a positive reaction. It might be well to note that in every case the only information the laboratory had was our serial number. We believe, from correlating the clinical findings with the laboratory reports, that the latter are trustworthy as indicating syphilitic infection, and do not hesitate to base conclusions on them.

PORTO RICO

In the report of his observations on the skin diseases of Porto Rico, King[1] gave a brief description of the climate and people of Porto Rico, because few persons have any adequate idea of the place, and it would afford readers a better appreciation of the diseases under discussion. King, who is a trained observer and has spent many years on the island, said:

> Porto Rico, lying on the eighteenth degree of latitude, comes within the geographic boundaries of the "tropics," and the prevalent American idea, fed by popular fiction, pictures the West Indies with a hazy mixture of extreme heat, palm trees, and scantily clad "natives," with dread diseases of all kinds lurking in all corners.
>
> In Porto Rico palm trees are plentiful, to be sure, but the climate, while warm, is tempered by sea breezes along the coast and by the altitude in the interior. It is seldom sultry, even in the hottest months, and the summer averages cooler and more pleasant than in the United States. There being but comparatively slight difference between summer and winter, the climate is monotonous, and the uninterrupted warmth probably has important etiologic influences acting directly or indirectly through its effect on the susceptibility of the person, on the organisms which cause disease, or on the agencies which may transport disease.
>
> The people of Porto Rico are descended from two principal sources: the European settlers, chiefly Spanish, and the slaves imported from Africa, the aboriginal element having been so nearly exterminated in the early days of colonization that it may practically be ignored. A fairly numerous foreign contingent is composed of Europeans and Americans, and a recent immigration of a few thousand negroes from other West Indian islands. We have, therefore, in Porto Rico a mixed population, the white race greatly predominating, the black race in much smaller number, and a large element of the mixture of the two races in varying proportion. The habits of the people and the conditions under which they live and work are those of the tropics rather than those of the temperate zones, and apparently most tropical diseases, including those of the skin, should find suitable conditions for development. At the same time, the island is not so far removed geographically, climatically or in other respects from temperate climes but that the diseases of those regions might also find conditions more or less suitable to them.

GENITAL DEFECTS

The present study was made from the adult men of such a population. The scrunity of admitting officers and the inspections after assignment to companies tended to put into the hands of the venereal officer a larger number of suspects than would ordinarily volunteer for consultation. It is not surprising, therefore, that almost 10 per cent. of the men of the command have been observed by this officer in the three months that the men have been in camp; 1,163 patients have been registered at the venereal infirmary.

Hydrocele is one of the most common genital defects found. It is almost an insular characteristic. The cause is variously given, but the prevalence of filariae is generally thought to be the etiologic factor. Fifty-two men came to the infirmary with hydroceles of various sizes. In not a few, it is no exaggeration to say that the scrotum hung as low as the knees. Strange to say, a hydrocele of more than moderate size, and usually bilateral, gives the Porto Rican no apparent discomfort. For many years the trousers made on the island allowed for the extra mass. Many men wear suspensories, as might readily be supposed, but more for appearance than for comfort.

Elephantiasis of the scrotum accompanies few of the cases of hydrocele. The *Filaria sanguinis-hominis* is the etiologic factor here as in hydrocele. Of course in men already passed as fit for military service by local boards, we did not see the enormous masses that once were scrota, and which old textbooks usually represent as being carried about in a wheelbarrow.

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[1] King, W. W.: Some Observations on the Skin Diseases of Porto Rico, J. Cutan. Dis. 35: 459 (Aug.) 1917.

Varicocele has not been of common occurrence. In only two cases was this noted to be at all large, and in one of these there was an accompanying completely descended scrotal hernia.

Cryptorchism, or undescended testicle, was found in only one man. There was no palpable mass either along the canal or in the left half of the scrotum. There was no scar of operation or injury, and the man stated that he had never had more than one testicle. We classified this case as abdominal retention of testicle, left side. The man was, of course, accepted for service.

Phimosis was a common condition. In many cases the opening was extremely small and the flow of urine impeded. The preputial cavity became an accessory bladder, so to speak, from which the urine slowly found its way to the outer world.

Seven cases of cicatricial phimosis were recorded. Wassermann tests were always taken on these patients, but the results were negative.

One patient with gonorrheal urethritis had an exceptionally tight prepuce as a therapeutic obstacle.

Balanoposthitis is a common condition in phimotic cases; but we have noted, in addition, the almost universal disregard for cleanliness under the foreskin even when it can readily be withdrawn. The skin of the glans and the mucous surface of the prepuce become soggy, moist, eroded, and even ulcerated. We considered the possibility of the erosive chancre in these cases, have searched for *Spirochaeta pallida*, and have taken Wassermann tests repeatedly in these patients.

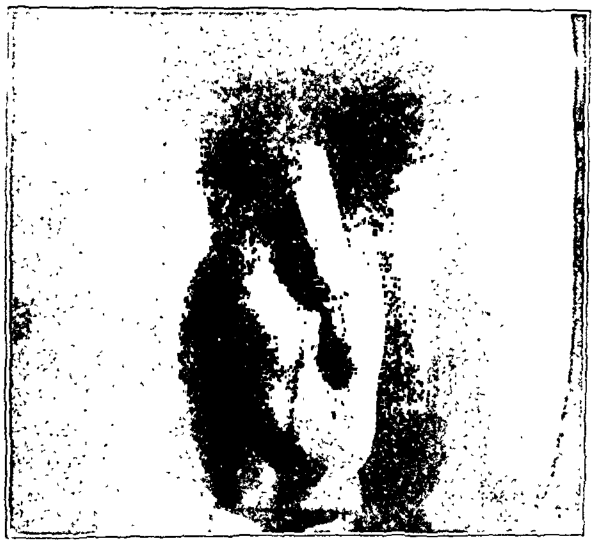
Fig. 1.—Hydrocele and elephantiasis of scrotum.

Paraphimosis we have recorded twice. Once it was a complication of acute gonorrheal urethritis.

Redundant prepuce is a relative term, to be sure, but all our men would be benefited by circumcision. In every individual examined, the entire glans was covered completely, and usually there was an inch to spare.

Operation was advised only in those cases of extreme phimosis in which it was not possible to expose the meatus urinarius. These men, we thought, were not safe for field duty.

One case of congenital stricture of the meatus urinarius was observed. Unfortunately for this man, the stricture was large enough to admit the diplococcus, although the tip of the urethral syringe was too large.

Urethral stricture was encountered only in those cases in which there were symptoms. In two of these the stricture had tightened down so as to admit only a filiform bougie. We are told that the urethra of the Porto Rican is almost as subject to excessive scar formation as that of the negro, and that stricture is locally regarded as part of the course of urethritis. We have not been able to confirm this statement.

Tinea cruris, or the eczema marginatum of the older writers, was encountered in only three cases. King thought that this is "a very common disease in Porto Rico and is seen with remarkable frequency in persons of excellent sanitary habits." He recognized the unity of this infection with the interdigital eczema recently popularized as Ormsby's tinea. We have diagnosed tinea of the crural region, armpits and toes in the same case.

Sebaceous cysts of the scrotum are common among these people. Although we registered only three at the infirmary, we have seen scores at our inspections that were never examined at the infirmary. The tumors are always multiple, and we have counted as many as seventy of all sizes on one man.

Pediculosis pubis was found twenty-four times in one regiment within a few days; recognizing an impending epidemic, we took measures that limited the ravages of the pediculus.

FRAMBESIA, OR YAWS

We recognized two cases of frambesia, or yaws, among the enlisted men. Each already presented the generalized eruption of crusts under which were the strawberry pulpy masses. The *Treponema pertenue* of Castellani was demonstrated in the lesions from both patients, and the Wassermann test was + + + + in both men. One patient was treated with 0.3 gm. of arsphenamin at weekly intervals for two weeks, and the lesions entirely receded. King "did not see the disease in its active stages nor encounter *Treponema pertenue*, although it was sought in the skin lesions of suspicious nature or history."

Captain Gutierrez, M. C., U. S. Army, tells us that he has records of seven cases, in not all of which, as we supposed should be the case, was the Wassermann test positive. The presence of concomitant syphilis must always be considered, but yaws is known to be one of the diseases that gives a "paradoxical" positive Wassermann test in the absence of syphilis.

REPORT OF CASE

The patient treated for yaws at the camp was a private, aged 24, who had been in service two months. He presented about twenty-six lesions, which were crusted, umbilicated and dry. Under the crusts was a moist, papular pulp. *Treponema pertenue* was demonstrated in smears. The Wassermann test, Aug. 7, 1918, was + + +; August 21, + + + +; September 13, + + + +. August 22, 0.3 gm. of arsphenamin was administered; August 28, 0.3 gm., and September 16, 0.4 gm. September 3, 1 grain of mercuric salicylate was given. The delay in initiating treatment was incident to the transfer of the patient to the base hospital and his return to the camp.

URETHRITIS

We were careful to instruct all company commanders to get their men who had or had had venereal disease to volunteer for treatment. If on future examination, they were told, venereal disease was disclosed, they would be punished. In this way many chronic cases were disclosed in which treatment was required. In a few cases, syphilis or gonorrhea was acquired prior to entry into the service, but the incubation time was spent in the camp. One case that had graver consequences than most was that of an accepted candidate for the officers' training camp. On the night before the opening of the camp, he took his last "fling." He passed his initial examinations after entrance. About five days after, he noticed a serous discharge but laid it to the unaccustomed physical exertion. The primary stage of the urethritis passed into the purulent period and he was speedily taken from the ranks. The finding of the gonococcus of Neisser in smears shattered this man's hopes for a commission.

In a few cases, an unrecognized and not reported chronic urethritis developed acute exacerbation after varying periods of drill. These men were sent to the base hospital. If the man had had a pass since entry into service, it became a nice task to distinguish between a case of urethritis acquired prior to entry or since entry into the service, and hence General Order 45, 1914.

A number of men admitted to the army with venereal disease were immediately sent to the base hospital for treatment. Under the old laws of enlistment, these men would have been rejected; but the Selective Service Regulations wisely provided for unconditional acceptance in all cases of gonorrhea, acute and chronic, and of syphilis with remediable manifestations.

We hesitate to say that infection was acquired with intent to evade military service, but it is certain that at least 25 per cent. of these men acquired their infection between the time at which they learned they were going to camp and the time they actually arrived there. One thing that led to the belief that a venereal disease would disqualify for service was the fact that members of the officers' training camps were discharged from the camps if they developed gonorrhea or syphilis. In a circumscribed community as this island is, such discharges and the cause thereof speedily become public property among the registrants.

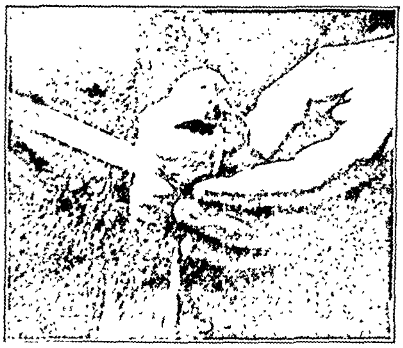

Fig. 2.—Chancre, ulcerative type.

One hundred and fifty-three cases of acute or subacute urethritis were registered. Of these men, ninety-eight with purulent, bacterial urethritis were sent to the hospital as incapacitated for field service. The subacute cases require a word further because in this island urethritis has an extended period of virulence. The reason is the universal practice of self treatment, for among all classes of society, the milk of the coconut is regarded as a specific for urethritis. "Coco de agua" is proclaimed by high and low alike, and it bears the recommendation of the very best medical authorities. The favorite prescription is a dram of Epsom salt placed into the opened nut and taken in the morning. The élite use a gram of sweet spirit of niter instead of the more proletarian Epsom salt. An average coconut contains 500 c.c. of fluid, so the therapy satisfies the thirst, irrigates from within, and the dram of magnesium sulphate has a physiologic effect on the bowels.

Of chronic cases of urethritis, we found 241 in camp. These men presented little or no discharge, had had urethritis, and the urine showed shreds, or was cloudy (not phosphates or carbonates). These men were found without treatment to develop an acute exacerbation following the drill and physical exercises of camp life.

These patients were treated daily except Tuesdays and Sundays. A card for each patient was kept with name, diagnosis and organization. The date and character of the treatment were entered on this card. When the urine became clear, this fact was noted. It was remembered that it takes at least 4 ounces of urine to wash the anterior urethra completely; also if the patient did not fill two glasses, it was not wise to give him credit for a clear urine because the patients soon learn to urinate a few moments before coming for the test, and the urine they do pass is clear. After a patient had five clear urines on five successive days or with a Sunday or Tuesday intervening, he was discharged from treatment, and allowed to have a pass. We were able to use in the treatment of these chronic urethritis cases potassium permanganate solutions varying from 1:1,000 to 1:3,000. In other cases we gave Ultzmann's solution of zinc sulphate, 2 gm.; lead acetate, 2 gm.; phenol, 2 gm., and water, sufficient to make 1,000 c.c.

All fluids injected into the urethra were a little above body heat. Glass urethral tips were sterilized by boiling each time used. In giving the irrigations for anterior urethritis, the irrigating can containing the fluid was not more than 2 feet above the level of the penis. The flow of fluid was interrupted so that it was not forced behind the constrictor muscle and so set up a posterior complication.

In only occasional cases did we find posterior urethral involvement. For these we gave retrojections of physiologic sodium chlorid solution, 2 per cent. boric acid solutions, or Ultzmann's solution in half or quarter strength.

SYPHILIS

The syphilitic lesions we have seen differ in no way from those seen in the United States. Of chancres, we have examined the small papular chancre; the papular necrosive chancre; the indurated ulcerative chancre (hunterian), and the erosive chancre. As often before demonstrated, the frenum is a point of lowered resistance to the entry of *Spirochaeta pallida*, and at least half our cases presented the initial lesion in this location. A fairly common type of initial lesion is presented by multiple lesions of the prepuce at its free border, a sort of rosette, accompanied by much edema. In one case a lesion within the preputial orifice gave rise to much suppuration. *Spirochaeta pallida* was demonstrated in this case, and arsphenamin therapy gave immediate results.

Patients were admitted to the service with the clinical diagnosis of primary syphilis who had passed the primary serologic stage and were in the "silent generalization stage" of syphilis: that is, presented chancre and no secondary lesions of skin or mucous membranes, but in whom the Wassermann test was reported + + + +.[2] We conceive of the local glands having been invaded by the syphilitic organism and from there having entered the general circulation through the medium of the major lymph channels. *Spirochaeta pallida* is free in the blood at this period, but no metastatic foci have had time to evidence themselves.

There were eighteen cases of recent secondary syphilis with generalized eruptions. The macular, the maculopapular, and papular ulcerative lesions of the secondary period were all seen. Flat condylomas, mucous patches, and the split papule of the corner of the mouth were observed. In one case the flat condylomas extended along the raphe of the scrotum, along the ventral surface of the penis, and in the penile scrotal sulcus.

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[2] Goodman: Diagnosis and Treatment of Syphilis in Men, Am. J. Syphilis 2:344 (April) 1918.

We found on the examination of the blood in 262 cases presenting scars of penile lesions, of healed buboes, or of ulcers of the lower leg or about the knees, that 108 had a + + + + Wassermann reaction. These cases we considered in the latent tertiary stage or the stage of potentially active syphilis. They were all treated.

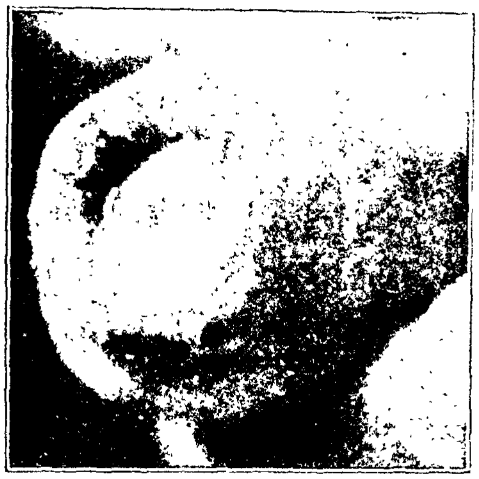
Fig. 3.—Multiple chancre; rosette of lesions.

Many men examined volunteered the information that certain scars about the lower legs (clinically not syphilitic at all) were the result of syphilitic infection. Blood tests in these cases were negative. In fifty such instances the men were given mercuric salicylate for six weeks in 1 grain doses each week, after which another Wassermann test was taken. The mercury did not provoke a single positive result. We are led to agree with King, that of the numerous skin ulcers coming under notice in Porto Rico, the vast majority have seemed to be due to ordinary pyogenic infections.

Active tertiary lesions of the gumma type we have not seen at all. In one case a patient presented serpiginous ulcerating lesions of both palms. The Wassermann test was + + + + and there was ready response to arsphenamin therapy.

We did not expect to find in a selected group of men between 21 and 31 years of age the disfiguring, large, ulcerating lesions of late syphilis with which this island is supposed to abound.

We recognized one case of hereditary syphilis by the saddle nose. There was no history of infection, and the Wassermann reaction was + + + +; but neither teeth, eyes nor ears gave any indication of the syndrome of late hereditary syphilis.

We thought it would be interesting to obtain a syphilitic index, so to speak, of the command. For this purpose we took the blood Wassermann test on all the bakers and cooks. This test served also to determine the fitness of these men for their special duties.

The first series consisted of ten civilian cooks, and four had + + + + Wassermann tests. One other cook had a + Wassermann and a history of syphilis. This series indicated that the infection index of syphilis would be 50 per cent. The next series was 151 enlisted cooks. Of these, twenty-eight, or 18 per cent., gave a total inhibition of complement, and five more gave a + +. Another series of twelve civilian cooks was next tested, and three were positive. The difference of infection can be thought to be due only to the difference in age groups of the civilian and enlisted men. The latter were all under 31 years of age. The bakery unit was formed in camp, and according to regulations, the blood test was done on all its members. Sixty examinations were made, of which fifteen, or 25 per cent., were + + +, or + + + +.

The total number of routine examinations of enlisted men was 211, with forty-three positive, or 20 per cent. The smaller series of civilians was twenty-two, of which six, or 27 per cent., were positive. In neither group do we consider in these summaries the inconclusive results of + or + + Wassermann reactions.

It is interesting to compare these figures with those of other sections of the United States. Pusey[3] says:

> The best estimates that we have in America come from some examinations of men in the public service. Reasoner, from a study of one regiment of the United States Army, estimated that 7 per cent. of the men were syphilitic. Bartlett, for another regiment, estimated that 10 per cent. were syphilitic.
>
> Vedder and Hough, from a valuable study of 1,283 cases in the government hospitals for men in the public service from all parts of the United States, estimate that 10 per cent. represents closely the prevalence of syphilis among men in the United States.
>
> Nichols of the United States Army, who has given great attention to the subject of syphilis in the army, believes that for the army as a whole the rate is something over 5 per cent. and, contrary to the common impression that syphilis has a high percentage in the army, he brings forward good reasons for believing that the prevalence of syphilis is not higher in the army than among men in general of the same age.

TREATMENT OF SYPHILIS

The cases we treat in camp are limited to the noninfectious cases by the orders of the Surgeon-General. This is as it should be, for, in the close association of camp life, it is best not to expose the healthy to the possibility of unmerited infection.

All patients with chancres and with the open lesions of syphilis are transferred to the base hospital. Opportunity for research of an advanced character is hardly given by a field service, but the safe and approved therapeutic procedures are all used. These are outlined in "The Manual of Treatment of the Venereal Diseases" and schematized in a circular of the War Department, Office of the Surgeon - General, Aug. 29, 1918.

In brief, they provide for the administration of arsphenamin (in our cases, arsenobenzol, Dermatological Research Laboratories) not oftener than once in five days, in dilution of 25 c.c. to the decigram, and in dosage of 0.1 gm. to each 30 pounds of body weight, for a course of six injections. Mercuric salicylate in 1 or 1½ grain doses intramuscularly once a week for nine weeks is given concomitantly with the arsphenamin injections. In our own series of cases, to the noninfectious Wassermann-positive, latent tertiary syphilitics we gave courses of mercuric salicylate injections of 1 grain doses for six weeks, rest for four

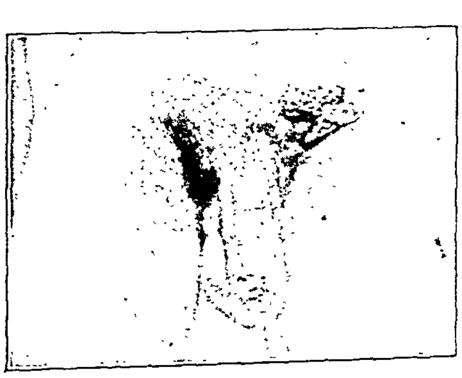
Fig. 4.—Condylomata lata in incision for syphilitic bubo.

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3. Pusey, W. A.: Syphilis as a Modern Problem, Chicago, American Medical Association, 1915.

weeks and repetition of the mercury course. A blood Wassermann test was always done at the beginning and close of a course. Patients with recently acquired syphilis, on return from the base hospital, were given courses of arsphenamin. Other patients who had had infectious lesions of syphilis just prior to entering the service were treated with arsphenamin to prevent secondary or recurrent secondary lesions.

There should be no more difficulty in treating syphilis in the field than in any well regulated outpatient hospital service; in fact, it should be much less difficult because of the control of the men which the army affords. Intravenous therapy is feasible, and with proper preparations of the apparatus, freshly distilled and boiled water, patient without the previous meal, and with the bowels clear, there should be no reactions.[4]

MEASURES FOR THE PREVENTION OF VENEREAL DISEASES

After three months in camp, during which time the number of enlisted men rose from 250 to 12,000, only nine new cases of venereal disease were acquired. We are proud of this low number among a population so recently under military control. A high standard was set and no infections among soldiers was the aim. To this end, every measure advised by the Committee on Venereal Diseases in its "Program of Attack on the Venereal Diseases" was carried out. The campaign against incapacitating soldiers by avoidable diseases deserves a separate paper, but the broad outline may briefly be given here.

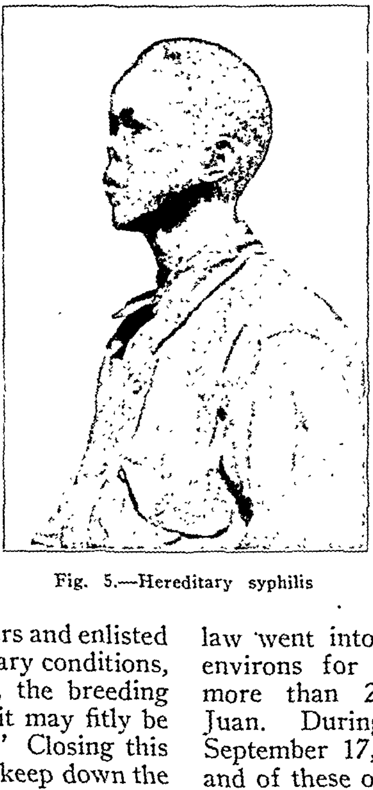

Fig. 5.—Hereditary syphilis

No passes for enlisted men were issued until the facilities at the venereal infirmary for prophylaxis had been established. The character of the order permitting passes was suggested by the venereal officer at the company commanders' meeting when the matter was brought up for discussion. Puerta de Tierra, in guide books called a suburb of San Juan, was declared out of bounds for both officers and enlisted men. The sanitary or rather lack of sanitary conditions, the prevalence of all sorts of diseases, the breeding place for every epidemic on the island, it may fitly be called "the place that God never knew." Closing this part of the island has certainly helped to keep down the venereal rate. Passes to San Juan and adjacent towns were limited to daylight except to married men whose families lived in these towns. Passes to more distant parts could be issued for over night. The number of men allowed passes was put at 25 per cent. of the command.

A personal inspection of cities and towns within sixty miles of the camp was made on the first Saturday and Sunday that the men were given freedom, and the conditions were found to be so bad that a campaign to exterminate prostitution was planned. As a forerunner of the power of the military authorities to close cities to men in uniform, Maniti was declared out of bounds to enlisted men. In this city more than seventy prostitutes were known to the police, and forty-eight were registered at the police office. In the streets on which these women lived, a policeman pointed out to the investigator eight houses with the assurance that he could find pleasure within.

The aid of the attorney general and the chief of the insular police was enlisted, and by a concentrated movement of both these officials, prostitutes who had formerly all been tolerated, even though known and registered at local police stations, were arrested and sentenced to six months or one year in jail. Heretofore, short sentences of fifteen days or fines had been imposed. This action on the part of the civilian officials took place one week after the pass order was given, so it will be seen that the possibility of infection was immediately reduced. It should be added that the first week of freedom immediately preceded a pay day, and the majority of the men were without funds. As the police cleaned up town after town, conditions about the island became much better. A uniform was avoided by the "ladies of light living," and the facilities for prophylaxis were not taken advantage of for good reasons.

Characteristic of all movements for the better, San Juan, the largest city of the island and nearest to the camp, was the most backward in this elimination of evil. The principal papers were actively antagonistic toward the efforts for cleanliness. Editorially and otherwise, adverse criticism was heaped on the crusade to prevent infection among present and future soldiers. The camp surgeon was instrumental in having the order prohibiting enlisted men going to San Juan except on official business. This order came out on the Friday preceding a pay day and a Labor Day holiday.

Here are a few figures to show the extent of the socal evil in San Juan: At the time that inspection and regulation were in vogue, more than 1,500 women were inscribed public prostitutes. At the time the "5 mile" law went into effect, some 600 left the city and its environs for other parts of the island. By June, more than 250 of these had returned to San Juan. During the entire campaign from July to September 17, only forty-two women were arrested, and of these only twenty-six were sentenced. During the two weeks that the city was closed to soldiers, forty-eight women were arrested by the federal authorities who, until that time, had taken no action under the federal law which had already been extended to include a 10 mile zone about cantonments and camps.

Preceding and during all this campaign, efforts to reach the public through the press were initiated. Many articles were published through the medium of the Police Women's Reserve Corps, formed under our immediate supervision. Much credit for awakening the local chapters of the American Red Cross, the Council of National Defense, the W. C. T. U., and the purely local societies, such as the Ministers' Union, to the pressing need, must be given to Mrs. Edith Hildreth, who publicly sponsored the "Clean up your town" campaign.

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[4] Compare Goodman: Preparation of Solutions of Salvarsan and Arsenobenzol for Intravenous Use, New York M. J. **107:** 1122 (June 15) 1918.

Step 5.—The superficial tissues are closed by routine methods, and a small dry dressing is applied.

Step 6.—Care must be taken to provide suspension of the testicles in order to prevent the postoperative swelling and the subsequent induration of the scrotal end of the cord.

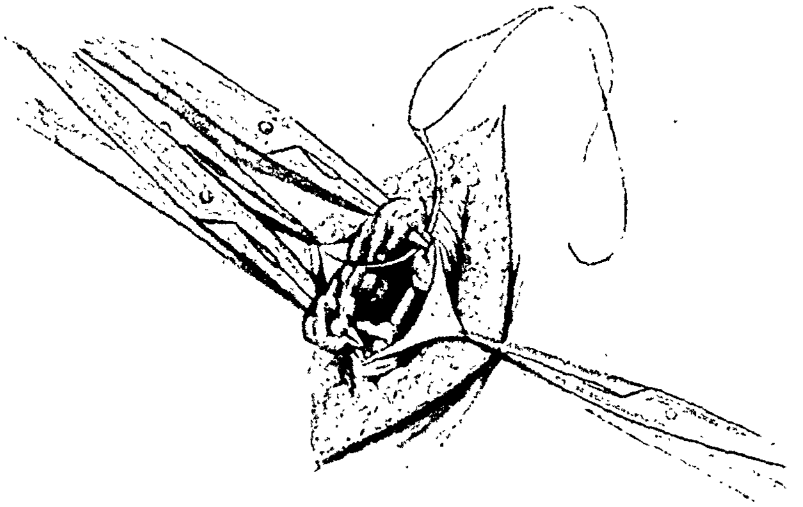

Fig. 4.—Raising up spermatic veins, disclosing vas lying in bottom of wound.

COMMENT

No priority is claimed for this method. An excellent description of a similar operation is found in Taylor's "Operative Surgery." Very few textbooks pay much attention to the cosmetics of varicocele or to the details of this simple operation.

There is no necessity for subjecting the vas and its accompanying vessels to trauma, yet most operative methods include as a step the lifting of the cord from its bed. This greatly increases the postoperative induration. Induration should be a rare sequela. In this method the tissues are subjected to a minimum of trauma. I have followed the principle of this method for a number of years in operating aboard ship for varicocele under local anesthesia without distress to the patient. Handling the vas is liable to be painful and makes complete anesthesia difficult.

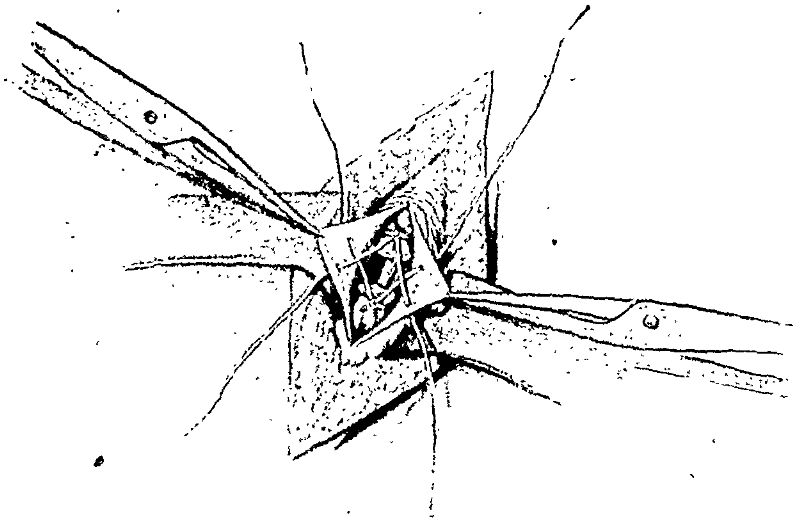

Fig. 5.—Manner of passing ligatures used to tie spermatic veins for closing cord covering.

The spermatic artery is excised with the spermatic veins, no attempt being made to separate it. Bevan[1] satisfied himself by a review of his own varicocele work, and by a review of experimental work on dogs to determine the blood supply of the tests, that there were two distinct and separate sources of blood supply for the testicles, namely, the spermatic vessels, and the other vessels accompanying the vas, either of which were quite sufficient to maintain the nutrition and the function of the organ.

I am indebted to G. V. Schwarz, the artist at Naval Hospital, Philadelphia, for the excellent illustrations of the operative steps.

U. S. Naval Hospital, Philadelphia.

HOSPITAL STANDARDIZATION

WITH ESPECIAL REFERENCE TO MEDICAL EDUCATIONAL WORK IN HOSPITALS *

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There are few social institutions progressing and changing so rapidly as hospitals. At the present time, therefore, "standardization," in the sense in which that word is usually used, which would mean the determination and use of types of institutions and types of work generally accepted as best, is clearly impossible. Types would be out of date long before they could become established. On the other hand, progress and enthusiasm have made many dissatisfied with conditions which are as yet quite general, and which should unquestionably be replaced by better methods. To those who have thought most about the problem, "hospital standardization" includes the setting of minimum standards; but this only as a minor feature. The majors are the development of the institution to meet more effectively and more efficiently in every way occasions for work from the front door to the ash pile. In this sense the word "standardization" will hereinafter be used. The hospital is a more complex institution than is commonly understood by trustees, managers and department workers, including the medical staffs. In fact, it is often a question if they have not become too complex to be managed successfully by superintendents now available. It is unusual for men to develop real interest in so many and so different human activities as a modern hospital must include.

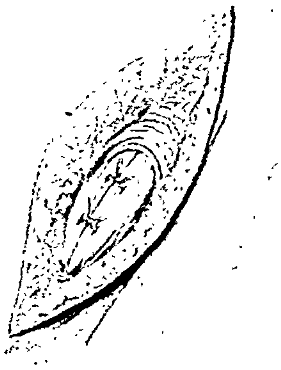

Fig. 6.—Closure of wound by tying of two sutures, as described in article by Dr. Angwin.

MULTIPLE FUNCTIONS OF HOSPITALS

It was not long ago that hospitals were merely institutions for the care of the ill, for the physicians. Then hospitals assumed the responsibility for educating and training professional nurses. We are more or less familiar with the expansion of hospitals as social institutions, not only in the development of the work generally called "social service" work, but also in the work of the institutions in the broad general development of sociological progress. The words "reconstruction work" have come to have concrete meaning. There is today the responsibility to utilize to advantage the convalescent patient's idle time, in educational, Americanization or occupational study. There exists a responsibility to the patient's home and family. The various sociological institutions of an organized community are now holding hospitals strictly responsible for a cooperation in work and for a consideration and service to patients other than medical. There has also come the demand on hospitals to train and develop various types of technical workers, so that many hospitals now have definite courses of instruction for this purpose. This list includes institutional dietitians, anesthetists, technical laboratory workers, nurse maids for children, and a few others. The dispensaries (or outpatient departments) of hospitals were called such because the first institutions dispensed drugs on prescription to the worthy poor. The present diagnostic treatment and educational functions of dispensaries are late developments. Until very recently, outpatient service was confined strictly to the same worthy poor. Of late, however, the evening pay clinics have been developed which extend this service, particularly in the specialties, to the working man of small income. The present policy of the government in regard to venereal disease will necessarily write a new chapter in the development of dispensary work.

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[1] Bevan: Surgical Clinics, p. 1103 (Dec.) 1918.

* Read at the Fifteenth Annual Conference of the Council on Medical Education of the American Medical Association, Chicago, March 3, 1919.

The standardization of a hospital means the standardization, development and balancing of all these activities: one measure cannot be applied to all. Certain limited groups, as the American College of Surgeons, limited in the sense that their part in the work of a hospital is limited, have become deeply interested in the problem and have, I believe, quite unfortunately called this ambition and the efforts to better conditions "hospital standardization." There have been corresponding ambitions in various other groups of hospital workers, as the nurses, the dietitians and social service workers, as well as other groups in the medical profession. It is obvious that the work of these various groups, which have no contact or common ground outside of the institution, should somehow be correlated, harmonized and utilized to the advancement of hospitals and hospital work. Some disinterested and impartial agency or organized group of agencies should be developed to accomplish this task, and to round out hospitals to meet better the needs of the various communities. In doing this, it is likely that hospitals will be divided into various types to meet the various needs; and then, as these various types become clearly and generally recognized, the practitioner and the public will not be misled as to the kind of service a given institution can be expected to render. All this is a tremendous task. Who should do it? It has seemed to many an established principle that it would be unwise for any department to attempt to standardize the whole. There are some who would adhere to this principle so closely as to feel the impossibility of establishing a standardization in medical departments, pathologic departments or laboratory departments which was developed by, or generally believed to be developed through, representatives of the surgical department. The nursing departments, the social service departments and others would not for valid reasons readily accept the standardization worked out by a medical department, or all the medical departments combined. If the task were a matter of simple standardization in the ordinary meaning of the word, an independent foundation or commission might undertake it; but the problem is too great and too varied, the ideals too indefinite, and progress too rapid to permit this. The agitation of any group, however, for minimum standards, for classification of work and for development will easily accomplish results more than justifying the effort, especially if a way can be developed to put into operation with some expediency the unquestioned recommendations for good.

As long as the American Hospital Association was simply a voluntary association of hospital administrators, little could be accomplished through this organization. At present, however, the American Hospital Association is in the process of transition to an association of hospitals as the constituent members comparable in every way to the national associations of various trades and industries. As soon as this transition is completed, this association will have the attention of hospital trustees and managers who are keenly alive to the advantages of a national association in any industry, and there will be established an organization which can theoretically at least put into effect by the pressure of influence and public opinion, if not by law, various reforms leading to more rapid advancement in minimum standards. It is the opinion of some also that through this association there can be worked out a classification or typing of hospitals, so that the type and the work in a given institution is fixed by minimum standards and is known to all. It is principally in the interest of the public and humanity in general that these changes should be brought about, yet this in no way lessens the benefits to the medical profession, or to other groups of workers or to the institutions themselves.

All efforts toward hospital standardization have a positive and direct effect on medical education, which is the topic of especial interest to this meeting and which must be standardized with the rest of the institution.

A frank discussion of medical education, as carried on by the hospital, strictly from the standpoint of hospital aims and strictly in the interest of hospital development, may help in the determination of common ground and in the standardization of this work. This paper represents such a discussion, so far as I am entitled and competent to write it.

RESPONSIBILITIES OF HOSPITALS

The modern hospital has direct responsibilities in the education of undergraduate medical students. Here, and here only, is clinical material collected together and combined with facilities for this work. It is probable that only a comparatively few hospitals will ever be called on to provide facilities of this sort, and few hospitals other than university hospitals can be used to advantage in this work. It is, however, clearly the duty of the institution which can be helpful in this way to accept this duty and carry on such activity. These hospitals do now and will in the future more sharply comprise one definite type.

In the last few years there has been a tendency to reduce greatly the amount of didactic instruction in the fourth year and to assign these students to ward work in hospitals. At Lakeside such students are called clinical clerks. They do not lodge in the institution, but spend practically the entire day on the wards at this work. It is unquestionably more effective to teach clinical medicine at the bedside, and the fourth year students may well be taught largely by this method; yet in order to carry this out satisfactorily there is the necessity of a sufficient number of class hours, ward walks, etc., to make the experience to these students in work comparable to intern experience extremely limited. The visiting physician or surgeon does not find them at all times available. The tendency, therefore, is to organize and carry on the routine work without them. They remain students only. The greatest value of such a system has been its service in establishing its own defects. It has demonstrated, first, that fourth year medical students are not yet in a position to secure maximum advantages from internship work. It has demonstrated the value of and need for more bedside instruction in order to develop an advanced generation of physicians. It has brought out the need for a required fifth year to be spent by all students strictly as interns on a general rotating service. This will permit further development in the fourth year instruction along lines of clinical pathology, ward walks, etc. After the fifth year spent as intern in general or rotating work, the student is prepared to undertake special work. It is my opinion, based on observation of the results at Lakeside, that it is unfortunate for fourth year medical graduates to go directly into special services, even to services limited to general medicine or general surgery. There is apparently more loss than gain, and until the fifth year is established it seems better that internships should invariably be general or rotating. This program of a fifth year will bring distinct betterment in hospital work, and hospitals are therefore interested in its adoption.

On the other hand, graduate medical instruction in some forms and to certain degrees is possible in every hospital and should be carried on to the maximum extent. Every hospital has this opportunity, and its responsibilities to society are not properly discharged until it does its best, at least in the matter of advancing the professional attainments of its staff and such other physicians as work in the institution. It may be that a hospital may not feel that it owes anything to its staff or to the medical profession as a whole. It may feel that the financial advantages to the staff are greatly in excess of the return by the staff to the institution, and this may be true; but this in no way discharges the responsibility of the institution to the future sick and to society to advance the medical skill of these men as far as possible, and to do this without thought or consideration of the benefit to the physician personally.

Another obligation on hospitals is the training of postgraduate medical students in the form of interns or fifth year students. Like many hospital activities at the present time, the value, excellence and efficiency of this work now varies greatly. The real purpose and justification of this system (better care for the future sick) is not always the controlling factor it should be in the practical working out of the plans. Too often it is considered, on the one hand, as a system to get routine hospital work done cheaply and, on the other, a benefit to the individual intern. There is an immediate value in this system to the intern and to the hospital, but this alone does not justify internships, and the young graduate in medicine certainly does not owe this service to hospitals. The internship must justify itself as service to medical progress, to better public health, and must be judged solely by this standard. There is the obligation on the medical schools to assume some responsibility in guiding their graduates in the selection of internships to insure maximum development of these graduates.

NUMBER OF HOSPITALS AND GRADUATES

The number of hospitals is increasing rapidly. The number of medical graduates is for the time being decreasing. The trend is such as to make it improbable if ever again the medical schools will produce enough graduates in medicine to provide interns for all, or even a large proportion, of the hospitals of the country. The internship as an essential organization of hospitals is gone, and substitutes for this system must be produced. It is certain that as the disparagement between the number of hospitals and the number of medical graduates increases, the tendency will be for interns to seek the educational opportunities offered by the larger, better equipped and more active hospitals, and quite properly so. A salary connected with an internship will not make good deficiencies in educational opportunities. With this in mind, it has been suggested that there be developed a specially trained nurse who knows something of anesthetics and laboratory work to take over intern work in the smaller, so-called "nonteaching hospitals." Such an arrangement would facilitate the "standardization" of internships for the better, assist positively the demarcation of types of hospitals, and open a new field for nurses. To the patient in the small hospital without well organized visiting staffs, it is a question between the trained nurse responsible actually and directly to the attending physician, and the raw, untrained intern with a new license to practice and a feeling that his first allegiance is to his dignity. Experience would lead some of us to choose the nurse.

If the final decision is what now seems probable, i. e., that the first year after graduation be spent in a general or rotating clinical hospital service, the number of hospitals that can be developed to offer attractive and sound educational opportunities for this year will undoubtedly exceed the number of medical graduates. After this first year of general clinical work, there should exist in a certain number of hospitals opportunity for specialization and opportunities wherein a student may spend from one to five years additional in special training either in general surgery, general medicine, or in any of the specialties. Only a limited number of hospitals will be able to carry on work of this nature. This number will be greatly increased over the number now engaged in this work by the general and lay recognition of the simple and accepted principle that surgery or any other specialty can be developed to higher skill by several years' residence in a hospital offering adequate facilities than by the more usual method of working into the specialty from general practice. If this is recognized by hospital trustees, the assuming of the obligation to develop future specialists by this method is assured. In order to accomplish this it may be necessary that at least the latter years of this training be based on fellowships that provide living expense; but the education of the general public in the value of this work will promptly produce the necessary funds, as it is unquestionably a wise investment for the philanthropic.

THE BASIS FOR COMPENSATION OF THE SOLDIER FOR CARDIAC DISEASE *

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Nine months of experience on the disability board of General Hospital No. 9, where we have had unusual clinical opportunities for the study of patients suffering from various forms of cardiac disorder, have enabled us to draw some practical conclusions which may be of use to demobilizing boards.

The determination of disability hinges on diagnosis, so we may consider, in some detail, the classification of cases as they appear for discharge.

Functional cardiac disorder may be considered first. In this nomenclature, we have followed the revised manual of the Medical Department in preference to the other terms which are coming into more or less general use, such as "effort syndrome," and "neurocirculatory asthenia." The classification adopted covers various types under this heading, cardiac disorder functional, namely, constitutional inferiority; defective physical development; neurotic type; postinfectious type; postrheumatic type.

In the diagnosis of cases of cardiac disease the history is of the utmost importance and must be elicited with special care to avoid "suggestion." This was obviously necessary in dealing with the recruit who was desirous of avoiding service. At present, the danger seems less, since exaggerated claims of disability which existed prior to military duty tend to minimize the responsibility of the government and lessen the chances for compensation. With care, however, it is usually possible to arrive at a fairly accurate estimate of the soldier's physical and mental type before enlistment.

1. CONSTITUTIONAL INFERIORITY WITH CARDIAC DISORDER FUNCTIONAL

This general term is used to cover all forms of inferiority except that of chronic invalidism, which is of sufficient frequency to be given a separate heading as defective physical development.

These individuals give a history of more or less disability from earliest childhood, in which various illnesses may have played a rôle, but in the main they are essentially and primarily lacking in ambition, courage, energy, aggressiveness and endurance. As boys, they never played games requiring physical stamina, both because of a lack of the normal spirit of contest or sport, and because participation produced the syndrome which stamps the disorder. Usually there is associated mental deficiency in the sense that these patients appeared to be incapable of advancing beyond the lower educational levels under ordinary stimuli, and as they grew older were content with a low economic level in the job that made the fewest psychic and physical demands compatible with their economic needs.

Physical examination of such patients is essentially negative. Physical development usually is somewhat below normal, and the muscle strength as shown by the Martin test may be below the standard; but more often the defect is not physical in a strict sense. Subjectively they complain on exertion of dyspnea; an early sense of general fatigue; cardiac palpitation; precordial pain, distress or tenderness, and vertigo, in the order of their frequency and importance. The area of cardiac dulness is not increased, tested by physical examination and by roentgen ray and the electrocardiograph. The pulse rate is unduly accelerated by any physical exertion and usually by excitement, although the time for the return to the normal rate for the individual may not be greatly prolonged.

The first sound at the apex as a rule is exaggerated and short, often suggesting the snapping first sound of mitral stenosis. At times a suggestion of a presystolic thrill can be felt in the erect position, and it is not hard to imagine that a faint presystolic murmur is heard. In the supine position the presystolic factors quickly disappear in contradistinction to the accentuation usually found in true mitral stenosis.

In this connection, it is interesting to note that the presystolic element in normal heart sounds, which Dr. Wiggers of Cornell University Medical College has demonstrated by the phonocardiograph, is a plausible explanation of the thrill and murmur. Whatever their origin, it is noteworthy that they are felt and heard almost invariably in the individual with the thin chest walls, which so greatly facilitate sound conduction. This type also exhibits with great frequency the basal systolic roughening or bruit, heard best in the second or third left interspace close to the sternum, and more pronounced in the supine position.

Regardless of the type of the chest, a soft systolic apical murmur is usually heard, loudest in the supine position and not transmitted, while cardiorespiratory murmurs are more or less common. The point of maximum intensity may be pronounced, and is often diffuse, depending both on the type of cardiac contractions and on the resiliency and thickness of the chest wall.

These "constitutional inferiors" are essentially useless for military purposes. Under ordinary conditions of recruiting the majority would be recognized and rejected by experienced army surgeons, not so much on account of the cardiac condition, but because of their evident inaptitude for service. Whatever the claims of these patients may be, it is a perfectly fair assumption that their condition has not been made materially worse by army service, because they have instinctively avoided severe exercise on account of its results. The soldier of this class who reports at sick call, or enters the hospital within one month or less of the time of his induction or enlistment, cannot be said to have suffered any real harm from his military efforts, and disability should be rated below one tenth to exclude the individual from compensation.

2. DEFECTIVE PHYSICAL DEVELOPMENT WITH CARDIAC DISORDER FUNCTIONAL

In these patients we have a physical defect more or less in evidence. Of most frequent occurrence is the so-called habitus enteropticus—the chest of the "carnivorous" type with relaxation of the abdominal muscles, while those of the chest and limbs are poorly developed. Usually the muscle strength test falls below the normal limits, and general nutrition is poor. The early history resembles that of the constitutionally

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* From U. S. Army General Hospital No. 9.

inferior type so far as it concerns the ability to indulge in physical exercise, but there is not the same pronounced lack of ambition. Very often they have had serious and numerous illnesses during childhood, which may have been etiologic factors in the maldevelopment. This type must be carefully differentiated from that which suffers from the cardiac syndrome accompanying active tuberculosis. A comparatively small number of our patients exhibited definite, arrested tuberculous lesions. From the history it was clear that this had been the most important factor in the defective development.

The individual of the "defective physical development" type has often been encouraged or compelled by his physician or his parents to lead an inactive life because of an evident lack of physical stamina, or a belief that the heart was not "strong." For the same reason, as he gets older he selects the occupation that requires the least physical exertion, but his ambition and intelligence as a rule compel a higher economic return than that accepted by the constitutionally inferior type.

The actual cardiac findings on physical examination differ in no material degree from those found in Class 1. The subjective symptoms are the same, although the early sense of fatigue often plays a more prominent rôle than dyspnea.

The marked instances of this type likewise are essentially useless for military purposes and should never have been passed for military service. As a class, however, they go farther without a breakdown than do the constitutional inferiors, and in many instances are entitled to compensation because the breakdown occurs after several months of military duty, and in all probability results therefrom. Any other physical exertion, however, of the same degree would have produced the same result.

Most of the men belonging to these two groups are total abstainers from alcohol, not from any moral reason but because the effect is unpleasant. Tobacco and coffee apparently bear no essential relation to their symptoms. In the laboratory studies these patients show abnormal responses to sympathetic stimulation, and various degrees of disturbance in the glands of internal secretion. They stand at attention with muscles relaxed and the weight of the body resting on the pelvis. Their coordination is poor and they cannot be persuaded or forced to make the full effort at any time. Consequently they show very slight gains in strength, even after several months of daily exercises. Such men seek any excuse to avoid physical exertion and are often falsely accused of malingering. Careful electrocardiographic studies often show pronounced changes in the sympathetic control, such as could easily give rise to the disturbing symptoms. This causes one to doubt the wisdom of forcing men so generally below par to make their full effort unless they are under very close observation.

The following are given as sample histories of cases in these groups:

Case 1.—*Defective physical development.*—B., a soldier, aged 23, who had been in the service ten months and had performed no active duty, had had convulsions in infancy and had never been strong. His parents had been warned that he had a weak heart and that he must never be left alone. He had never walked over one mile a day. He had never taken any part in athletic games. He had had no serious illnesses. His parents were well. His mother was nervous. He had finished high school at 19. He had had no regular occupation. He always has had precordial pain, shortness of breath, and rapid, pounding pulse on slight exertion. He was easily fatigued. He had never fainted, but was dizzy on sudden change of position. The heart was normal in size. There was a soft systolic blow at the apex, standing, which disappeared on lying down and after exercise. Electrocardiograph showed a sinus arrhythmia; rate, standing, 112; lying, after fifteen minutes, 88; after exercising, 130. There was a slight tremor of the hands. The thyroid was palpable. There were no eye signs. The basal metabolism was normal. Strength : weight = 13.[1] After two months of daily exercises, strength : weight = 17.2. There was marked precordial tenderness.

Case 2.—*Constitutional inferiority.*—S., aged 25, who had been in the service four months and on active duty three days, was still in the fourth grade in school at 16. He never could take part in any games or do any hard work on account of precordial pain, dizziness and fatigue. He had frequently changed work because of symptoms. He had worked as a rag sorter before service, and had earned $10 a week. He had been satisfied and had liked the work because he could sit down and take his own time. His mother was nervous. His father was alcoholic. One brother was epileptic. The heart was normal in size. There were no murmurs. There was no tenderness. The thyroid was not palpable. There was marked tremor and a slight lid-lag. The basal metabolism was normal. He could not learn to execute the command: "About face." He showed marked difficulty in all the balancing exercises. He knew little about the war. He did not read the newspapers because reading made him nervous. When he entered, strength : weight = 16.8.[1] After six weeks of daily exercises, strength : weight = 17.7.

At times we find an individual whose cardiac disorder is out of all proportion to his physical defects and who is far above the constitutional inferior in intelligence and ambition. His former occupation, selected without regard to his health, made so few physical demands that he was totally unprepared for the severe strain of military training. Overzealous drill sergeants, or the hurried demands for even untrained men in France, forced this soldier at a pace beyond his limited endurance. His cardiovascular system apparently broke under the strain in spite of undoubted courage and a will to carry on. In this type can be accomplished the most striking cures, in a literal sense, from graduated exercises. Such patients should not be discharged until ample opportunity for cure has been afforded.

3. CARDIAC DISORDER FUNCTIONAL, NEUROTIC TYPE

In this we have the clinical picture of the neurotic or neurasthenic individual whose phobias have been directed to the heart. Ambition and intelligence are not lacking to the same extent as in Class 1. In place of these we find nervousness, unrest and hypersensitiveness, with the cardiac symptoms dominant. Palpitation, precordial pain and vertigo are more pronounced than actual fatigue, while the dyspnea is more subjective than objective. In the presence of slight enlargement of the thyroid, which sometimes occurs, differentiation of this type from that of true hyperthyroidism at times is difficult. In this connection it must be emphasized that slight enlargement of the thyroid, plus tremors of the hands and an easily excitable heart, do not constitute a syndrome on which to base a diagnosis of hyperthyroidism. The large majority of patients admitted to the hospital with this diagnosis have been found to have a normal basal metabolism. Hyperthyroidism to the extent of causing cardiac disturbance and nervous unrest, which at the same time fails to increase oxidation, is of a type that must be explained on purely hypothetic grounds.

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[1] The strength was estimated by the Martin spring balance test. Strength to weight normal values were obtained on 100 soldiers who had had over a year of hard training. The average S/W value for these men was 24.5.

A careful history of these patients of the neurotic type shows that the cardiac disorder dates back to early childhood, while the thyroid enlargement in cases of true exophthalmic goiter can be proved clearly to have been of recent development. In a few of our patients the history pointed to a definite exophthalmic goiter, which developed since childhood and which had apparently left a residuum of thyroid enlargement and exophthalmos. In the presence of a normal basal metabolism it was necessary to interpret the cardiac symptoms either as a sequel of the active exophthalmic goiter, or as a concomitant defect of the nature of that which forms the basis for all of these functional cases.

Whatever the explanation, these patients of the neurotic type are not suffering from hypersecretion of the thyroid gland, so far as can be determined with present-day facilities. They deserve compensation only when their ambition has led them to disregard symptoms in the attempt to carry on, with consequent damage to structures — cardiovascular, nervous, or whatever they be — which are fundamentally unfit for such a strain.

4. CARDIAC DISORDER FUNCTIONAL, POSTINFECTIOUS

Individuals of this type date the onset of their cardiac symptoms very definitely to an attack of one of the acute infections which are known to affect the myocardium at times, such as pneumonia, influenza, meningitis, diphtheria, and streptococcus infections. In the patient seen during the acute illness, definite evidence of myocardial involvement sometimes can be demonstrated, if we can accept such findings as an enlarged area of dulness with alteration in force and rhythm, and the definite murmur of mitral insufficiency. After a few weeks these may disappear entirely to be succeeded by the negative picture of functional cardiac disorder. Seen first at this stage, a diagnosis of myocarditis cannot be made with positiveness. However, the majority probably are essentially of the functional type throughout. If such patients can be followed for a sufficient period, it is again possible that a certain proportion will develop evidence of a true myocarditis; but failure to find it six months after infection would warrant the belief that the symptoms of cardiac disturbance were dependent on other factors than irremediable myocardial degeneration. In a few doubtful cases the electrocardiograph has enabled us to differentiate true myocarditis, which would have been difficult to determine on purely clinical evidence.

In the majority of these patients the physical findings are the same as in the other groups. Subjectively the dyspnea on exertion is the most prominent symptom, while precordial pain and vertigo are less frequent. The latter facts are in noteworthy contradistinction to the findings in myocarditis on the one hand, in which precordial pain is quite common, and to the neurotic or constitutionally or physically inferior types on the other hand, in which both precordial pain and vertigo are frequently encountered.

The determination of the line of duty of such disabilities offers no difficulties when they follow acute infections occurring while on duty. Much more difficult is the determination of the disability. Full consideration should be given to the individual who followed an active pursuit prior to enlistment and who carried on well during his military service until he contracted the infectious disease. He should be warned of the dangers of physical idleness on the one hand, and of over activity on the other. Under the worst of circumstances probably only a few will fail to revert to their former physical status, so that the compensation may safely be assumed to be "temporary."

How long to continue the physical training of these patients often is not easily determined. If proper facilities are available under suitable environment, and nostalgia from prolonged stay in hospitals is not a factor, many of them can be completely cured in from six to twelve weeks. For some, a "therapeutic furlough" restores morale and enables them to undertake the cure in an adaptable frame of mind. In not a few of these postinfectious cases, the history of events before enlistment and the presence of certain characteristics found in the group of the "constitutionally inferior" or in the type of the "defective physically" show that they were substandard even before the acquired infection. For such patients disability need not be large if their previous occupation has been light or sedentary, since their physical handicap will not weigh heavily on their wage-earning capacity. The more closely they approach the constitutionally or physically defective type, however, the less the chance for improvement from the exercises.

5. CARDIAC DISORDER FUNCTIONAL, POSTRHEUMATIC

This special classification was made before the signing of the armistice, in the belief that no patient whose cardiac symptoms dated from an attack of rheumatic fever could safely be permitted to return to full military duty, no matter how slight the evidence of myocardial damage, as well as on account of the tendency to recurrence under conditions of active campaign. All the cases in this group were studied with especial care to determine valvular and myocardial lesions. In a large proportion, no more evidence of definite pathologic changes could be found than in the preceding four groups, so that we were forced to place them under the class of functional disturbances, although it is reasonably certain that some will develop later definite myocardial lesions. For this reason, their compensation should be more liberal for any active vocation, and the possible contingencies anticipated with the statement, "future problematical."

HYPERTHYROIDISM

We have had a comparatively small number of cases of true hyperthyroidism with persistent tachycardia, nervous unrest, turgescence and enlargement of the thyroid gland, marked tremors, more or less exophthalmos, and, above all, increased basal metabolism. Since treatment of true exophthalmic goiter, apart from surgical interference, primarily consists of complete physical and mental rest, while the worst thing that can be done for a victim of functional cardiac disorder (as Lewis points out) is to be put to bed, the differentiation of the two diseases is of vital importance from a therapeutic standpoint. This subject has been considered in an article by Major Peabody, which is in process of publication and need not be considered here. The disability resulting from true exophthalmic goiter should be absolute with the prospect, naturally, that full compensation will not be needed indefinitely.

MIXED TYPES

Not a few cases have been of a mixed type, when constitutional inferiority, defective physical development, and neurotic characteristics have all figured prominently in the patient's antecedents. These cases offer diagnostic difficulties; but disability and compensation are decided on the basis of the kind and amount of military duty performed, rather than on an academic accuracy of differentiation. We have had very little experience with the disturbance of cardiac action that follows exposure to gas, although the history at times showed a clear-cut etiologic relationship. A separate study of gassed patients has been instituted.

ORGANIC HEART DISEASE

The description of these cases needs no special consideration. As usual, it is found that acute rheumatic fever, both before and after enlistment, figures largely as an etiologic factor. Several instances illustrated the perfectly well recognized, but not yet sufficiently known fact that the valvular lesion itself plays a negligible rôle in producing symptoms, so long as the myocardium is competent. The iron-worker or stevedore with valvular disease may accomplish his heavy day's work for years in absolute ignorance of his impending disability. One noteworthy case gave a history of a severe attack of rheumatic fever two years before enlistment. Subsequent to this he worked as a boiler-maker without any apparent cardiac embarrassment. Two months after enlistment, having been examined and accepted in Class A, he experienced an attack of suffocation with some blood spitting while on a march with full equipment from Brest to his regimental billets. At the time he was suffering from a "cold," but otherwise he had been perfectly well since enlistment. After a day's rest he recovered, but seven days later while at drill he had another and larger hemorrhage and was finally invalided home. We found a typical mitral stenosis, which, it is reasonably certain, had originated in the attack of rheumatism some two and a half years previously.

In the preparation of his certificate for discharge, the disability was put "not in line of duty," for the obvious reason that the length and type of service had been too short to produce such disability in any but a potentially ill man. The reviewing authority requested that this decision be reconsidered on the basis of the wording of General Order 47, War Department, which provides that any determined disability which occurs subsequent to a soldier's enlistment, after he has been examined and passed, shall be considered in line of duty, unless it can be shown unmistakably that the disability existed prior to military duty. The use of the word "disability" instead of "disease" offers ample opportunity to compensate a soldier who has been rendered hors de combat by cardiac disease.

The actual and relative number of instances of aortic regurgitation in overseas patients has been surprisingly large. Two explanations for this can be offered: first, that mitral murmurs are less easily overlooked, and consequently that their possessors are rejected, and second, that the stress of intensive training and the even greater stress of actual conditions of battle have aggravated lesions that were in their incipiency at the time the soldiers enlisted. In the absence of the concomitant signs usually found in this disease, the interpretation of a definite diastolic murmur at the left sternal border is open to some question, but can hardly be decided on any basis other than that of aortic insufficiency. Apparently this soft diastolic murmur is very frequently missed. The question has arisen as to the possibility of cardiorespiratory murmurs occurring during diastole when the patient checks his respiratory movements at the end of expiration. In one instaance of functional cardiac disorder in a thin-chested individual, a systolic cardiorespiratory murmur could be heard at the apex during respiration, but disappeared on the patient's holding his breath. In the same individual a distinct diastolic murmur was heard over the sternum at the end of both inspiration and expiration. This was atypical in time and quality and variable in intensity, however, and was undoubtedly produced by exocardial factors.

We have encountered two instances of congenital heart disease:

The first, patulous ductus arteriosus, occurred in an officer whose first cardiac symptoms of which he had any recollection occurred at the age of 8, consisting of pain around the heart felt chiefly on deep inspiration. At school he was unable to play games vigorously without dyspnea and the precordial pain, but the disability was so slight as not to interfere with his work later as a laboratory worker and veterinary surgeon. In July, 1917, he was examined and passed for military service; did full duty in this country in the veterinary corps; was sent overseas in March, 1918, and continued to do full duty until September 15, when under fire and the coincident excitement he developed an extreme cardiac palpitation, dyspnea and nervousness, for which he was invalided home. When he entered this hospital, November 8, he was feeling perfectly well when quiet, but complained of some dyspnea and palpitation on exertion. Examination of the heart showed the point of maximum intensity in the fifth interspace 9.5 cm.; left border, 10 cm. in the fifth interspace; right border, 3 cm. in the fourth interspace from the midsternal line. There was an almost continuous "humming-top" murmur, loudest during systole, heard best in the third left interspace, transmitted for some distance to the left and upward. The pulmonary second sound was accentuated in the recumbent position, and a soft systolic murmur was heard at the apex. There was practically no cyanosis except after exercise. After nearly two months of rest the condition of this patient is apparently the same as before he entered the Army.

The second patient was an enlisted man who claimed that he had never suffered any disability and had worked in an iron foundry for eight months before enlistment. In June, 1918, two months after induction, he developed his first symptoms—dyspnea, cough and weakness—while on a hike from the port of debarkation to his rest billets. On admission to this hospital in October, the area of cardiac dulness was not enlarged; there was slight accentuation of the second pulmonic sound and a rasping systolic murmur, loudest at the third left interspace close to the sternum, diminishing to a rather faint murmur at the apex and transmitted well to the left along the third and fourth ribs. There was no cyanosis nor any history of it. A diagnosis of defective interventricular septum, small lesion, seemed the most probable. The disability was rated with that of mitral regurgitation.

In spite of all that has been written, the fact still needs emphasis that most systolic murmurs at or near the apex are of functional, rather than organic, origin. In spite of many exceptions, the organic murmur is loudest at or near the apex, is constant, and is increased by exercise; and the functional murmur is apt to be as loud or louder at the base and is exaggerated in the supine position. To exclude cardiorespiratory murmurs, auscultation should always be done with the patient holding his breath midway between expiration and inspiration. Enlargement of the heart, making due allowance for the size of the individual and the shape of the heart and the chest, points to the organic lesion. Marked accentuation of the second pulmonic sound and transmission to the left axilla are significant but by no means infallible criteria. A few cases will almost elude analysis. In these, the previous occurrence of rheumatic fever often will turn the scale in favor of the diagnosis of an organic lesion. In general, also, we have observed that the acceleration of the heart's action, both at rest and after exercise, is less in the case with the true organic lesion than in the functional disorder.

The typical presystolic murmur of mitral stenosis would rarely be missed if the heart were ausculted with the patient lying down. This is of sufficient importance to warrant the use of examining tables. The only disadvantage would be the misinterpretation of the accentuation of the functional systolic murmur in the supine position. The differentiation of the Flint murmur with aortic regurgitation from that of a coincident mitral stenosis usually can be made on the crescendo character ending in the snapping first sound. At times, however, the distinction is difficult to make. The stenotic murmur usually is sharply localized at or just to the right of the point of maximum intensity. The Flint murmur has a wider distribution, at times extending even to the left border of the sternum. Both the aortic regurgitant and the Flint murmurs are heard better, as a rule, in the erect than in the supine position, while the murmur of mitral stenosis is affected in the reverse order. Definite enlargement at the base of the heart would be prima facie evidence of stenosis. Unfortunately, this is difficult to determine with accuracy, and even the orthodiagraphic plates are misleading in many instances. When all physical findings are inconclusive, the probability may be assumed that a double lesion would produce more disability than simple aortic insufficiency, unless the valvular lesions were of recent origin.

Pericardial lesions have been recognized in only a few cases. In one case which resulted from a high explosive shell wound with a definite history of a suppurative lesion, the only residual signs were a short and sharp first sound without murmurs, and a definite fixation of the heart on change of position. Another case had been diagnosed on the presence of well marked enlargement and Broadbent's sign. Mitral insufficiency was also evident, but was thought to be due to old valvulitis. This patient was killed in an automobile accident, and the diagnosis of pericarditis was confirmed at necropsy. The mitral leaflets were absolutely normal, however, and the insufficiency was purely relative.

In the majority of the cases we have seen, the valvular disease undoubtedly existed at the time of enlistment, and was overlooked by the examining surgeon. The disability which succeeded after several months of military duty therefore was considered to be in line of duty. In determining the degree of disability with a view to compensation, there should be due consideration for the expectancy of life and ability to continue in a wage-earning capacity, as well as for the type of work of which the soldier is capable. It is believed to be the intention of the Federal Board for Vocational Education to compel the soldier to take advantage of opportunities for learning a new trade, by refusing compensation for total disability in the case of a soldier who is physically able to carry on a lighter occupation after instruction, but is unwilling to take the instruction. Until the machinery for this is in good working order, it is manifestly unfair to the soldier to penalize him by compelling him to continue a laborous pursuit because compensation is not sufficient to enable him to live without it, so that disability should cover these needs, until provision can be made for vocational reeducation.

OCCUPATION

We have emphasized the importance of the history in determining the types of functional cardiac disease, and one of the most important items in the history is the previous occupation. In the series so far reviewed, over 60 per cent. of those with functional cardiac disease have earned their living in prewar days in light or sheltered occupations. Of the organic cases, over 80 per cent. have selected active economic pursuits, in spite of the more or less damaged condition of their hearts. As Major Peabody has elsewhere pointed out, those with functional cardiac disease always take particular care not to injure themselves by hard manual labor. The much more unfortunate victim of organic heart disease does not hesitate to take chances, in spite of great limitation of his cardiac reserve.

EXERCISE

We must emphasize the fact that our studies have demonstrated beyond reasonable doubt that the individual suffering from functional cardiac disorder of any type does better on exercise than on rest; that the exercise must be graduated from the smallest possible beginning, and that these patients require constant encouragement to overcome their natural aversion to, and fear of, the symptoms produced by exertion. These symptoms have resulted in their leading inactive lives until the vicious cycle has been definitely established. The cycle cannot be broken successfully by revolutionary methods. As has been stated, many of them fail to respond to any discoverable incentive. A few react to the gospel of muscular development, and it is an interesting speculation as to how many might have been saved a lifelong disability had the gospel been rightly preached at the impressionable age. The neurotic type is too self-centered and neurasthenic to be reached in ordinary class work. The approach to this individual must be psychiatric as well as physical. The postinfectious type offers the greatest possibilities for real cure, with the proviso that especial care must be exercised to avoid overstrain. True myocardial lesions in the light of our present knowledge demand rest until all definite signs have disappeared. Finally, it must be noted that graduated exercise offers a much better cardiac tonic for cases with valvular defects than years of clinical teaching have led us to believe. It cannot be too strongly insisted, however, that the fool rushing in where angels (of the past) feared to tread may work incalculable damage. Caution and skilled knowledge are prerequisities of successful treatment.

Tuberculosis.—Tuberculosis is the great scourge of civilized mankind. Unless more progress is made in fighting the disease, 9,000,000 of the 100,000,000 persons in the United States may be expected to die of it.—*Health Bulletin*, Newark, N. J.

BACTERIAL PROTEIN INJECTIONS IN INFLUENZAL PNEUMONIA *

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During the early days of the recent pandemic of acute respiratory disease, it became evident that we were dealing with a new and exceedingly fatal malady. In many cases it was obvious from the first onset that the peculiar widespread pulmonary pathologic condition was already established and that death was certain. In other cases we helplessly watched the sudden or gradual change from a mild type of the disease and from a limited pathologic process to the virulent form with the usual outcome. All therapeutic efforts seemed futile, the condition of our vigorous young patients changing for better or worse in the most puzzling manner. Desultory attempts were made to save life by phlebotomy and hypodermoclysis or by drugs supposed to effect a proper balance in the pulmonary circulation. Patients were accurately digitalized, but, while the heart action remained excellent, the end was only postponed. Transfusion of blood from recovered patients was tried in a few instances with unsatisfactory results. However, only the worst type of case was selected, and our experience with the procedure in lobar pneumonia strongly suggests that in a series of cases the results might be excellent. Hypodermic administration of mixed influenza, pneumococcus and streptococcus vaccines was tried in a well-controlled series of influenza cases as soon as possible after admission. The percentage of pneumonia and the mortality in this series was no lower than in the series of cases alternately admitted and used as controls. The results might have been different had a dosage been used sufficient to excite the phenomena that followed the intravenous injection of the same preparation.

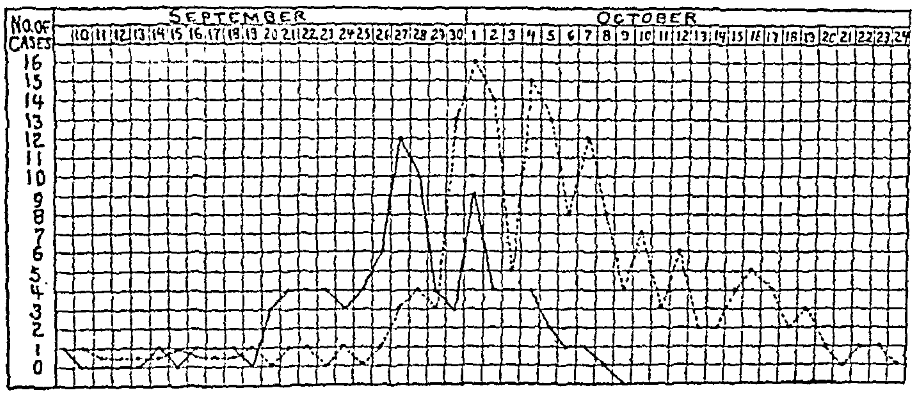

Chart 1.—Incidence of onset of pneumonia: solid line, Series 1; broken line, Series 2.

October 3, we began the use of intravenous injections of mixed influenza vaccines in a consecutive series of cases, varying slightly the dosage and the mode of procedure as experience accumulated. Chart 1 shows the incidence of the onset of the disease in the two series from the beginning of the epidemic to the conclusion of this study. Each series of cases is entirely made up of definitely established pneumonias. Patients were admitted either directly from the receiving ward with pneumonia already developed, or were held in the influenza wards until consolidation was definitely established. No cases were excluded from either series because of the hopeless condition in which the patient was when admitted, some in each series dying in a few hours.

It was at first thought that by the use of these mixed vaccines a specific immunity might be quickly established against what we believed were the secondary invaders, namely, the pneumococci and streptococci. We soon found that in spite of the establishment of massive consolidation, good results were obtained when there was a definite reaction following the injection, and we came to believe that we were largely dependent for results on a "nonspecific protein" reaction. We felt, however, that the use of a vaccine made from the prevalent organisms was advisable for many reasons, and no observations were made with other forms of protein.

THE VACCINE OR BACTERIAL PROTEIN

A saline suspension of heat-killed organisms was used, so that each cubic centimeter contained 100 million influenza bacilli; 100 million pneumococci, Types I, II and III; 100 million streptococci and 100 million staphylococci. So far as exciting an active immunity is concerned, it is apparent on studying the bacteriology of the disease, as seen in the accompanying table, that streptococci and pneumococcus Type IV were frequently present, and the vaccine was probably not sufficiently polyvalent because of our inadequate knowledge of these strains. At the outset we used 0.5 c.c. as the initial dose, and doubled the dose daily until four doses had been given. Later we used 1 c.c. as an initial dose and regulated the succeeding doses by the amount of reaction. We were anxious to secure a sharp reaction, and the dose was increased or held the same according to the character of the reaction secured.

THE REACTION

The characteristic reaction following injections is seen in Charts 2 and 3. About one-half hour after the injection there is a chill or chilly feeling accompanied by a definite rise in pulse rate. In from one-half to two hours later there is a rise of temperature of from 1 to 3 degrees depending on the previous level. The elevation of temperature is always of short duration and is easily overlooked unless the temperature is taken at least every half hour. The fall of temperature may be only slight, but at best it is a crisis, reaching practically normal. Elevation in a few hours may occur after several falls until finally the temperature continues normal. During the chill the patient is not particularly uncomfortable, and when it is over and the temperature falls there is a definite improvement in the state of well-being. From our experience with over 200 cases treated by protein injections, it may be positively stated that there are no untoward results whatsoever. The severely ill are never made worse.

While it is true that the results are unsatisfactory if a reaction does not follow the injection, and that

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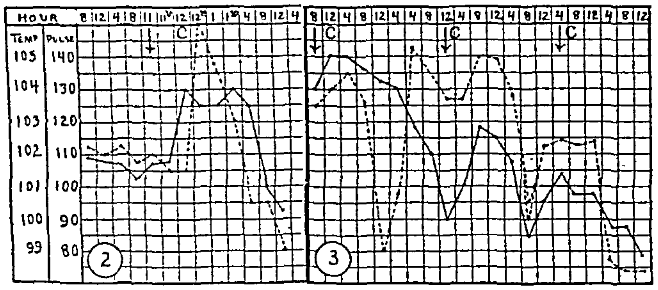
* From the United States Army General Hospital No. 1 (Columbia War Hospital).

the results are usually satisfactory if there is a sharp reaction, these rules are not without exceptions.

Charts 4, 5 and 6 give daily reports of the course of the temperature before and after the injections in some particularly severe cases. Under expectant plans of treatment, judging from bedside observation and the extent of the pathologic process as shown by roentgenograms, cases such as these always ended fatally. By this form of chart the true relation between injection and temperature rise and fall is not explicitly conveyed.

RELATIVE MORTALITY

In Series 1, with expectant treatment, out of a total of eighty-six cases there were twenty-seven deaths, a mortality of 31.2 per cent. In Series 2, treated with protein injections, out of a total of 200 cases, there were nineteen deaths, a mortality of 9.5 per cent. The question arises at once as to whether the lowered mortality in Series 2 was due to the fact that it was later in the epidemic. In Chart 1 is shown the incidence of the onset of the cases in each series. It is shown that while the two series were not parallel, they overlapped to a certain extent. Taking the period up to and not including October 5, there is sufficient overlapping to permit of a fair comparison. In Series 1, eighty-three cases had their onset with a mortality of 31 per cent., and in Series 2 sixty-seven cases must be included, with a mortality of 11.3 per cent. This is graphically demonstrated by Chart 7. The mortality after October 5 was slightly lower, but this may perhaps be accounted for by improvements in the technic of administration. There appear to be no reasons for believing that there was a difference in the virulence of the cases included in the two series, although later on, during November and December, the virulence seemed to be somewhat lessened.



Charts 2 and 3.—Effect of protein injection on pulse and temperature: solid line, pulse; broken line, temperature; arrows indicate protein injections; C, chill. In Chart 2 the records were made at frequent intervals; in Chart 3 there was failure to catch the maximum rise owing to taking the temperature only every four hours.

RESULTS OF SPUTUM EXAMINATION IN INFLUENZAL PNEUMONIA

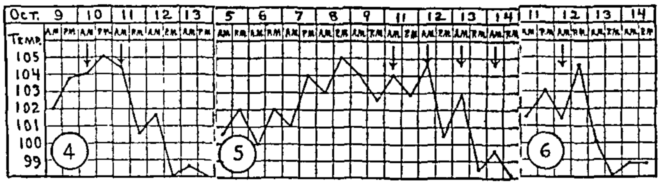
Number Examined		Influenza on Smear	Influenza on Culture	Pneumococcus Types I	II	III	IV	Hemolytic Streptococcus	Streptococcus Viridans	Indefinite Streptococcus
First series...	36	26	9	0	5	4	19	10	1	8
Second series	59	28	16	0	0	2	37	11	0	26
Totals.....	95	54	25	0	5	6	56	21	1	34
Percentage......		56%	25%	0	5	5	60%	22%	1%	36%

RECOVERY BY CRISIS

Usually the temperature returned to normal by lysis. In the first series, crisis occurred in 20 per cent. of the cases, while in the second series the temperature came to normal by crisis in 36 per cent.

COMPARISON OF DURATION OF THE DISEASE

In Chart 8 is shown the percentage of cases reaching normal temperatures on the various days after admission to the hospital. Had the injections not been withheld until the diagnosis was definitely established, the differences might have been even more striking. As it is, there can be no question that convalescence, as judged by the return of temperature to normal, came earlier in the protein injection series.



Charts 4, 5 and 6.—Course of temperature before and after injections in particularly severe cases: arrows indicate protein injections.

EFFECT ON THE LEUKOCYTE COUNT

The press of work precluded elaborate studies of the leukocytes before and after injections, but in a table prepared but not given here, the results in nine cases are shown. The rise was transitory, varied in its maximum, and was not always caught if, indeed, it was present. The increase was polymorphonuclear, and at no time was an eosinophil increase observed.

THE STATUS OF NONSPECIFIC PROTEIN THERAPY

The idea of using injections of bacteria and foreign proteins in the treatment of disease was forced on our attention largely by the excellent results reported from the use of typhoid vaccines intravenously in the treatment of typhoid fever and by the fact that later equally good results followed injections of other organisms. Since then a variety of proteins have been used and suggested, but the chief use has been made of the idea in the treatment of arthritis by typhoid vaccines. Apparently something happens as a result of the reaction following protein injections. Gay and Claypole, and others since, have called attention to the rise in the leukocyte count incident to the reaction. Various investigators have seemed to prove that there is a higher agglutinin and lysin production in animals subjected to high temperatures. Others have shown that the opsonin and lysin content of human and animal serum is definitely raised after the therapeutic injection of foreign protein. We have ourselves observed the most striking results in the prompt recovery of patients following the use of therapeutic serums when the amount given was so small that a passive immunity was out of consideration. Herrmann[1] in a recent summary of the subject concludes that "the intravenous

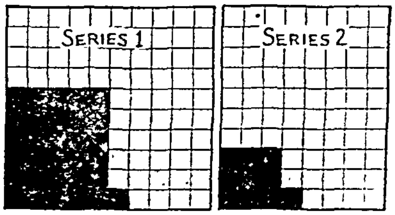


Chart 7.—Mortality (indicated by solid black): In Series 1 there were eighty-three cases with onset to October 5, and the mortality was 31.2 per cent.; in Series 2 there were sixty-seven cases with onset to October 5, and the mortality was 11 per cent.

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[1] Herrmann, S. F.: Liberation of Antibodies on Injection of Foreign Proteins, J. Infect. Dis. 23:457 (Nov.) 1918.

injection of foreign protein serves as a stimulus for the liberation of specific antibodies in animals in which the previously injected antigen was unable to cause such a liberation." In other words, while the therapeutic injection is nonspecific, the antibody response is specific.

The invasion of pathogenic micro-organisms excites certain symptoms or phenomena that are intimately associated with the development of immunity. Experience, at the present time, with the reaction following protein injections tends to show that the repetition of these phenomena, or their accentuation during the course of a disease, is followed, in many instances, by striking clinical results. Much remains to be done to determine the most desirable kind of protein and dosage. Aside from the dangers attending intravenous medication, it may again be emphasized that the procedure is harmless. Bacterial vaccines are always available in safe and convenient form, and a protein reaction may be secured by subcutaneous or intramuscular injection if a dose several times as large as the ordinary is used. Bacterial vaccines commend themselves because there is no danger of anaphylactic sensitization as is the case with many foreign proteins. Sterile milk is an admirable form of protein for intramuscular injection, but there is always a possibility of sensitization.

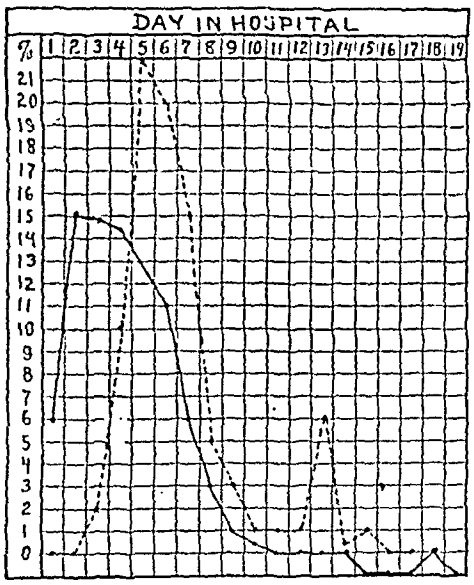

Chart 8.—Percentage of cases reaching normal temperature on days after admission to the hospital: broken line, Series 1; solid line, Series 2.

In studying and recommending any new therapeutic procedure, the greatest caution should be observed. We have endeavored critically to analyze our results and see to what other factors the shortening of the disease and the lessened mortality in our series of cases might be due. We have been forced to conclude that, in the malady under consideration, protein injections have a very definite therapeutic value, and we are inclined to believe that the procedure will come to be accepted as useful in a wide variety of infectious diseases.

Menthol.—Japan is one of the greatest producers of menthol and peppermint. According to Consul-General George H. Scidmore at Yokahama (*Commerce Reports*, February 28), the crop during the past year has been poor, the acreage of mint having been reduced by about 50 per cent. on account of the low prices prevailing in 1917. In 1916 the trade reached its height, most of the product coming to the United States instead of to Germany as before the war. Owing to conditions of shipping and other factors connected with the trade, the price began declining in 1917, and though the export in that year amounted to 332,275 pounds, valued at $793,975, the total for 1918 to the end of September amounted to $35,183 less than for the same period of 1917. The price had been steadily decreasing until the end of the war, when prices began going up; and at the time of this report had reached $7.73 per kin of 1.32 pounds, almost twice the lowest price reached in 1918. In the early part of 1918 the crystals were quoted as low as $2.50 and the oil at 90 cents per kin.

GROSS PATHOLOGY OF EPIDEMIC INFLUENZA AT WALTER REED GENERAL HOSPITAL

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In this paper is given a brief account of the gross pathologic changes seen in fifty-six necropsies of cases of epidemic influenza between Sept. 18 and Nov. 17, 1918, at the Walter Reed General Hospital. Within the next month only four other cases of influenza were examined at necropsy. These differ in no essential manner from the fifty-six cases of this summary, except that one became a Type I pneumococcus septicemia, pneumonia and double empyema, and resulted fatally sixty-four days after the onset of the original attack of influenza. Another developed a massive bilateral serofibrinopurulent pleural effusion and a fibrinopurulent pericarditis. I performed practically all of the necropsies. In a few I acted as an assistant. The account is based on an examination of the protocols of the necropsies rather than on general impressions as to the findings. There is no essential novelty in the findings, but as some of the gross changes differ slightly in kind and frequency from those seen in other localities, it would appear worth while to describe them. The cases came from military camps in the immediate vicinity of Washington, from men on duty in the city proper, or men stationed at the hospital. The first case coming to necropsy and recognized as epidemic influenza was from the Quartermaster Corps at the hospital. A week later the epidemic began in earnest. In addition to the gross necropsy findings there is included in this summary the leukocyte counts and the urinalysis of these fatal cases so far as they were made.

Part of the bacteriologic findings in this series of cases have already been reported on by Nichols and Stimmel.[1] When they seem of particular interest in these notes, the bacteriologic results are given. The bacteriologic studies were all made by these two authors. Bacteriologic examinations have yielded a variety of organisms from the lungs, pleural fluids, etc., among them pneumococcus, all groups but II, most frequently, Friedländer bacillus, influenza bacillus, hemolytic streptococci and staphylococci. No one form was found constantly present. Among many blood cultures, mainly antemortem, influenza bacilli were never recovered. The only locations in which this organism occurred were the lungs, bronchi or trachea, and the organism was obtained either antimortem or postmortem. It was isolated comparatively infrequently in this series of necropsies, and was never found to the exclusion of other bacteria, although late in the epidemic it was obtained rather consistently by lung puncture from patients.

DAY OF DEATH AFTER ONSET

The average duration of life from the date of onset was 12.4 days. The shortest illness was 3 days and the longest 35 days in a case of pneumococcus empyema. The average day of death in September with seven cases was 8.5 days; during the first half of October

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1. Nichols, H. J., and Stimmel, C. O.: Pneumobacilli as Complicating Organisms in Influenzal Pneumonia, J. A. M. A. **72**: 174 (Jan. 18) 1919.

with twenty-four cases, 10.3 days; during the last half of the month with seventeen cases, 13 days; and during November with four cases, 17.7 days. The increasing length of life after onset in the later cases is probably due not so much to greater virulence of the virus in the earlier cases as to the fact that those not succumbing in the early onrush lived to die of secondary invaders.

APPEARANCE OF BODY AFTER DEATH

The appearance of the body was in most cases characterized by a cyanotic condition of the neck, the ears, and the adjacent portion of the face and the shoulders. Equally conspicuous was a brownish or reddish brown fluid about the nostrils and the mouth. Often when the body was turned on its side, a large quantity of this reddish brown fluid, often frothy, drained from the nose and mouth. Of the fifty-six necropsies, only eight are recorded as not showing these conditions. In six cases, universal icterus of greater or less degree was present. Most of the necropsies were done on individuals who appeared to be between 20 and 30 years of age; about five appeared to be between 30 and 40. As the army is composed of young men, this excess of young adults is not surprising. Of the fifty-six cases, thirteen are referred to as of slender or less than average build, all the others being well built; but this proportion is probably no greater than the normal ratio of slenderly built and well built men in the service.

LEUKOCYTE COUNT

The average number of leukocytes per cubic millimeter in this series of fatal cases was 5,537, with extremes of 2,675 and 11,900. Nineteen were less than 5,000; seventeen between 5,001 and 7,500; four between 7,501 and 10,000, and three over 10,000. These figures include only the low counts, and disregard a number of high counts occurring at a period later in the disease when secondary infections were evidently in sway, such as 11,300 at twenty-one days; 12,600 at thirteen days; 15,450 at twenty-one days; 16,630 at thirty-five days; 22,100 at twenty days, and 30,300 at seventeen days.

CHANGES IN THE LUNGS AND ACCESSORY STRUCTURES

Hemorrhagic Pneumonitis.—This term is used to designate one of the characteristic lesions of the disease, and seen in all the cases. It was marked by intense congestion of the lung tissue and an abundance of serous fluid loaded with red cells in the alveoli. It was present in all lobes, and nearly always most conspicuous in the lower lobes and toward the mediastinal sides. In no instance did the process involve completely any entire lobe. Close examination revealed, in every case, air-containing areas. In the lower lobes, which were most involved and often appeared nearly solid, there were nearly always found along the anterior border of the lobe and even along the lower borders air-containing portions, usually emphysematous. These borders often appeared as a distinct air-containing edge. At other times they contained air-containing lobules, single or in groups. Sometimes in the midst of an almost solid portion of a lobe were found single air-containing lobules. The edges of the hemorrhagic areas in air-containing portions and of air-containing areas in the hemorrhagic portions were nearly always sharply defined. In three instances the hemorrhagic pneumonitis was essentially confined to one side, the left. In two instances the process was more pronounced in the upper lobes than in the lower. In no instance was the right lung involved when the left was not. In probably about half the cases the upper lobes were almost as extensively involved as the lower lobes, and their air-containing portions were emphysematous. Apparently the only reason why the entire five lobes of both lungs were not uniformly involved was that death necessarily occurred from lack of air before so complete an involvement could take place. It was surprising to see how extensive the lung involvement was and realize that only a few hours previously the condition must have been nearly the same while the patient was still living. On the other hand, there were cases in which the hemorrhagic pneumonitis was not extensive enough by itself to have caused death. The lobe least frequently involved was the right middle. In eight cases it was essentially uninvolved, of the fifty-three cases in which the right lung was attacked.

The distribution in the lungs of the hemorrhagic pneumonitis was very similar to the congested areas in the lungs seen so frequently in death from various causes. One cannot escape the conclusion that the hemorrhagic pneumonitis was in some manner connected with posture and the so-called hypostatic congestion of the lungs; but that this is not entirely so is shown by those cases, comparatively few, however, in which the hemorrhagic process was more pronounced in the upper lobes than in the lower.

Pneumonic Processes.—A more or less distinct consolidation was usually present somewhere in the lungs, although in eleven instances (20 per cent.) no real pneumonic process was observable, the only lung lesion being the hemorrhagic pneumonitis. The average day of death in these eleven cases was 7.7, with extremes of 3 and 16 days. The pneumonic process as here understood consisted of larger or smaller areas of distinct consolidation, varying in color, being light gray, brownish gray, or dark reddish brown. When the more grayish portions were scraped, considerable purulent material was usually seen. In thirty-five of the cases the consolidated portion was of small size and might be termed a lobular pneumonia. This lobular process occurred no more frequently on one side than on the other. Most often it was found in all the lobes, but was most pronounced in the lower lobes. In a few cases the lower lobes were the only ones involved. In sixteen cases the pneumonic process was extensive enough to be of a lobar type of consolidation. These lobar types of consolidation did not appear to be typical of lobar pneumonia as a primary disease. In no case was an entire lobe uniformly solid, but in many instances fully three fourths or two thirds of a lobe was involved. Nine of these lobar types were associated with a lobular type of pneumonia elsewhere in the lungs. Usually the lobar type appeared to be a confluent lobular pneumonia rather than a true lobar type of pneumonia. It occurred six times on the left side alone, and four times on the right side alone. In the six remaining cases this lobar process involved both lungs. While usually more frequently found in the lower lobes, the lobar type of pneumonia was occasionally seen in an upper lobe, when the lower lobe was not involved.

Other Lung Conditions.—In the instance in which a streptococcus empyema developed, the right lung is described as having tissue around the bronchi apparently infiltrated and of a light color—interstitial bronchopneumonia. Cultures from this lung yielded *Streptococcus hemolyticus* and Friedländer's bacillus. The same organisms were found in other lungs not showing this condition.

In one necropsy with lobar pneumonia in the right upper lobe and lobular pneumonia elsewhere in the lungs, pressure on the lung substance at various places expressed a small drop of thick, creamy pus from the cut bronchioles. This was the only instance in which this condition was seen, although there were five cases in which purulent material was found in the larger bronchi.

In one instance, cross-section of a portion of lung with marked hemorrhagic pneumonitis, the structure was slightly honeycombed with small bubbles resembling somewhat the liver in experimental gas bacillus infections in animals.

Emphysema of most of or at least some part of the air-containing portions of the lungs was always present. Sometimes the distention of the air vesicles was very marked. Interstitial emphysema was very rare. In three instances there were small bubbles of air or gas in the mediastinal tissue, a condition sometimes seen in any necropsy, and apparently in no wise associated with influenza. In two instances there was an apparent escape of air beneath the pleura, raising it up in a few places. By direct pressure these "bubbles" beneath the pleura could be pushed from one part of the lung surface to another. In a number of cases there appeared to be air-containing lines in or beneath the pleura, more or less roughly outlining the lung lobules. These were interpreted as small, once distended but now empty vessels. Aside from these few scarcely noticeable instances of interstitial emphysema, such a condition was not seen. Extensive accumulations of gas beneath the tissues anywhere, such as has been reported by some observers in other localities, was not seen.

No lung abscesses were found. In many cases, had the patient lived, abscesses would have in all probability formed; but in only one instance was there any indication of a distinct softening of any of the consolidated portions of the lungs, and that particular area was solitary and of small size.

Weight of Lungs.—The lungs were usually much increased in weight, owing to pneumonic and hemorrhagic processes or both. The average weight of both lungs together, including a few millimeters of trachea, was 1,953 gm., with extremes of 775 and 3,290 gm. In case each lung was removed separately, a portion of the trachea was always left attached to one. The unusually light pair of lungs came from a very slightly built individual who had a marked lateral curvature of the spine and an unusually small thoracic cavity, and in whom only the left lower lobe was extensively involved in the hemorrhagic pneumonitis. In the case of the pair with the maximum weight, the right lung was very much enlarged and almost uniformly solid; its weight by itself was 2,740 gm. In about half the necropsies, the lungs were removed attached to each other and used as museum objects. In the half in which they were removed and weighed separately, the average weight of the left lung was 870 gm. with extremes of 550 and 1,320 gm. The minimum occurred in the left lung of the pair that weighed the most. The maximum weight of left lung occurred in one having a distinct lobular pneumonic process in addition to the hemorrhagic pneumonitis. The average weight of the right lung was 1,118 gm., with extremes of 650 and 1,560 gm. The lightest right lung occurred in the first case of influenza coming to necropsy, and showed a hemorrhagic process in the upper and lower lobes but not in the middle. The lung was not weighed until after it had been sectioned and lost much blood. The heaviest right lung showed large areas of lobular consolidation and an extensive hemorrhagic process involving all the lobes. The pair of lungs in this instance was the second heaviest pair, being 2,980 gm. in weight. After these two lungs had been cut apart and each was weighed separately, the combined weight of both lungs was then only 2,880 gm., 100 gm. of red, frothy fluid having dripped from the bronchi and trachea. This loss of weight by draining of fluid from the lungs after they were cut apart or sectioned was always considerable, but it was recorded in only a few instances. In one case as much as 400 gm. were lost.

Trachea and Larger Bronchi.—On cutting across the trachea or the main bronchi in essentially all cases, a large amount of reddish or pinkish frothy fluid dripped out; in some cases the fluid was so abundant that the trachea resembled a large blood vessel when cut across. In five cases the fluid dripping from the trachea or bronchi was purulent, and in one case it was mucopurulent. The mucous membrane of the trachea and bronchi was nearly always markedly hyperemic and appeared swollen and deep red, this color being most marked in the intercartilaginous portions. In one case the mucosa was of nearly a normal pinkish gray, but marked with some hemorrhagic spots. Occasionally in some with a hyperemic mucosa there were hemorrhagic spots.

Bronchial Lymph Nodes.—The bronchial lymph nodes were in most cases (thirty-five) enlarged and swollen to a greater or less degree. In a few cases the enlargement was considerable and the nodes soft and edematous, attaining dimensions of from 25 to 30 mm. In five cases the glands are recorded as not enlarged. In the remaining cases they attracted no notice, and were probably normal in appearance.

Hemorrhagic Pleuritis.—One of the more or less striking, essentially constant gross lesions of influenza was what may be termed hemorrhagic pleuritis. By this is meant a bright or dull red spotting seen through the pleura on the surface of the lung. It appeared to be an extravasation of blood beneath the pleura, or else an extensive and local dilatation of the vessels of the surface of the lungs. These spots varied in size from those of a pin point up to spots of 5 or 6 or 10 mm. in diameter. They were irregular in shape, but in general round. The spots were usually more or less grouped together, and were frequently fused into large, hemorrhagic areas of several centimeters in diameter and of a very irregular shape. This subpleural hemorrhagic spotting might be found on any part of the lung. They were less commonly seen on the upper lobes. Sometimes they were much scattered and few in number, so that they were seen only on close examination. Frequently they were present in large numbers on the diaphragmatic surface of the lungs. They were about as common on the interlobular surfaces of the lungs as on the external surface. The interlobular spotting was more abundant, as a rule, toward the root of the lung than toward the periphery. When fibrinous deposits were on the surface of the lung, these subpleural hemorrhagic spots were frequently found beneath them. They were never found on the parietal pleura. The latter, as a rule, was markedly hyperemic.

Pleural Fluids.—The amount and location of the effusion is shown in the accompanying table.

AMOUNT AND LOCATION OF EFFUSION

	No.	Per Cent.
No effusion on either side	9	16
Effusion present only on left side	23	41
Effusion present only on right side	16	29
When effusion was present on both sides it had the same volume on both right and left sides	4	7
It was larger on the left side	24	43
It was larger on the right side	19	34

When effusion was present, the average amount on the left side was 206 c.c., with extremes of 20 and 1,150 c.c., the latter occurring in a case of typical empyema. The largest nonpurulent effusion was 850 c.c. On the right side the average amount of fluid was 165 c.c., with extremes of 15 and 1,100 c.c., the latter occurring in a case of empyema. The largest nonpurulent effusion was 600 c.c. A definite pleural effusion was present in all but nine of the necropsies, or 84 per cent.

The pleural fluid was for the most part serous, and very dark or a light reddish brown, as though stained with blood pigment. In one instance the pleural exudate having a clear yellowish brown color appeared bile stained; this occurred in a case that showed marked jaundice. In many cases, fibrinous material was very evident and was found loosely adherent to the lung or to the chest wall. Nearly always, some fibrin could be found either as a few loose threads or as a scant deposit on the visceral pleura. In one instance the fibrinous deposit was a light dirty brown instead of the usual yellow, and was deposited in larger or smaller subcircular spots on the lung surface. The fibrinous material was often found deposited between the lobes of the lungs. In three cases the fibrinous material had a gelatinous-like quality, the exudate being quite transparent and the lungs appearing in places as though covered with thin patches of jelly. In eight cases the fluid was slightly or distinctly turbid, but not to such an extent that it could be called pus. In two cases the pleural exudate was purulent, and the condition of typical empyema was present.

Empyema.— Only two cases of the fifty-six (3.5 per cent.) developed a typical condition of empyema. The duration of one of these was twenty-one days. The presence of fluid in this case was not suspected either by physical signs or by roentgenography, and the presence of massive effusion, 1,150 c.c. left and 1,100 c.c. right, was a surprise at the necropsy. It was a fibrinopurulent exudate and entirely similar to the streptococcus empyemas seen during the winter of 1917-1918. The hemorrhagic pneumonitis had essentially disappeared from the lungs. Both lower lobes were atelectatic; the left upper lobe showed a bronchopneumnoia. Pneumococci were isolated from the pleural pus and also from the pericardial fluid, although the latter was clear and did not contain an excess of fluid. The other case was a right sided empyema, and during life a total of 2,120 c.c. had been aspirated. At necropsy an additional 200 c.c. of fibrinopurulent fluid was recovered. Cultures yielded hemolytic streptococci. In this case, death occurred on the seventeenth day. In several cases the pleural effusion was more or less turbid, but was not what would be called pus. The duration of the latter cases ranged from seven to twenty days following the initial onset of influenza.

CHANGES IN THE HEART AND PERICARDIUM

Pericardium.—None of the cases showed a fibrinous or purulent pericarditis. A moderate serous effusion was often present. Although the fluids were clear, they were often dark, as though somewhat blood tinged. The average amount of fluid was 21.7 c.c. Twenty-two cases had less than 10 c.c.; fourteen between 11 and 20 c.c.; twelve between 21 and 30 c.c.; one, 35 c.c.; three between 41 and 50 c.c.; two had 75 c.c., and two, 100 c.c. The pericardial fluids were so clear that cultures were seldom taken; but from the fluid in a case of pneumococcal empyema, pneumococci were obtained; and in a case of streptococcic empyema, *Streptococcus hemolyticus* was obtained. Pneumococci were also found in the pericardial fluid in one other case, pneumococci being isolated from the lungs as well. The visceral layer of the pericardium never showed any change except in one case, in which a few petechial hemorrhagic spots were seen on the left side. The parietal layer in four instances showed distinct hemorrhagic spots, one of these being the same case that showed the spotting in the cardiac layer. The spotting always occurred in the left side, and was associated with rather extensive subpleural spotting of the left lung.

Heart.—In the entire series the heart showed no evident pathologic changes. In twenty-seven protocols the right heart is mentioned as being moderately or slightly dilated, particularly the auricle, which was usually well filled with dark fluid blood. The right ventricle was much less distended. In nine cases the protocols state that the heart was not dilated. The matter is not mentioned in the other cases. The average weight of the heart in this series was 322 gm., with extremes of 210 and 460 gm.

A white thrombus starting in each ventricle and passing through the aorta and pulmonary artery was very frequently seen. It was long and thin, and as it passed the semilunar valves it had on it three small appendages of the same material as the thrombus, corresponding to each cusp of the semilunar valves. These thrombi gave the impression of an agonal formation and as perhaps being due to some increased coagulability of the blood.

CHANGES IN THE SPLEEN

Not many of the spleens could be called septic even though blood cultures yielded pneumococci or Friedländer bacilli. Twelve are mentioned as being either septic, enlarged and filled with soft dark semifluid material, or simply soft and with dark semifluid contents without being enlarged. The average weight of the spleen was 187 gm., with extremes of 85 and 350 gm. Three weighed less than 100 gm.; thirty-one, between 101 and 200 gm.; seventeen, between 201 and 300, and three over 300 gm. The organ usually felt firm and in general was a very reddish brown, because of congestion, though in a few cases it was comparatively pale.

CHANGES IN THE LIVER

The liver appeared rather pale, the color being mentioned as light yellowish brown as a rule. Even when having an essentially normal brownish color, the ently infiltrated and of a light color—interstitial bronchopneumonia. Cultures from this lung yielded *Streptococcus hemolyticus* and Friedländer's bacillus. The same organisms were found in other lungs not showing this condition.

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Emphysema of most of or at least some part of the air-containing portions of the lungs was always present. Sometimes the distention of the air vesicles was very marked. Interstitial emphysema was very rare. In three instances there were small bubbles of air or gas in the mediastinal tissue, a condition sometimes seen in any necropsy, and apparently in no wise associated with influenza. In two instances there was an apparent escape of air beneath the pleura, raising it up in a few places. By direct pressure these "bubbles" beneath the pleura could be pushed from one part of the lung surface to another. In a number of cases there appeared to be air-containing lines in or beneath the pleura, more or less roughly outlining the lung lobules. These were interpreted as small, once distended but now empty vessels. Aside from these few scarcely noticeable instances of interstitial emphysema, such a condition was not seen. Extensive accumulations of gas beneath the tissues anywhere, such as has been reported by some observers in other localities, was not seen.

No lung abscesses were found. In many cases, had the patient lived, abscesses would have in all probability formed; but in only one instance was there any indication of a distinct softening of any of the consolidated portions of the lungs, and that particular area was solitary and of small size.

Weight of Lungs.—The lungs were usually much increased in weight, owing to pneumonic and hemorrhagic processes or both. The average weight of both lungs together, including a few millimeters of trachea, was 1,953 gm., with extremes of 775 and 3,290 gm. In case each lung was removed separately, a portion of the trachea was always left attached to one. The unusually light pair of lungs came from a very slightly built individual who had a marked lateral curvature of the spine and an unusually small thoracic cavity, and in whom only the left lower lobe was extensively involved in the hemorrhagic pneumonitis. In the case of the pair with the maximum weight, the right lung was very much enlarged and almost uniformly solid; its weight by itself was 2,740 gm. In about half the necropsies, the lungs were removed attached to each other and used as museum objects. In the half in which they were removed and weighed separately, the average weight of the left lung was 870 gm. with extremes of 550 and 1,320 gm. The minimum occurred in the left lung of the pair that weighed the most. The maximum weight of left lung occurred in one having a distinct lobular pneumonic process in addition to the hemorrhagic pneumonitis. The average weight of the right lung was 1,118 gm., with extremes of 650 and 1,560 gm. The lightest right lung occurred in the first case of influenza coming to necropsy, and showed a hemorrhagic process in the upper and lower lobes but not in the middle. The lung was not weighed until after it had been sectioned and lost much blood. The heaviest right lung showed large areas of lobular consolidation and an extensive hemorrhagic process involving all the lobes. The pair of lungs in this instance was the second heaviest pair, being 2,980 gm. in weight. After these two lungs had been cut apart and each was weighed separately, the combined weight of both lungs was then only 2,880 gm., 100 gm. of red, frothy fluid having dripped from the bronchi and trachea. This loss of weight by draining of fluid from the lungs after they were cut apart or sectioned was always considerable, but it was recorded in only a few instances. In one case as much as 400 gm. were lost.

Trachea and Larger Bronchi.—On cutting across the trachea or the main bronchi in essentially all cases, a large amount of reddish or pinkish frothy fluid dripped out; in some cases the fluid was so abundant that the trachea resembled a large blood vessel when cut across. In five cases the fluid dripping from the trachea or bronchi was purulent, and in one case it was mucopurulent. The mucous membrane of the trachea and bronchi was nearly always markedly hyperemic and appeared swollen and deep red, this color being most marked in the intercartilaginous portions. In one case the mucosa was of nearly a normal pinkish gray, but marked with some hemorrhagic spots. Occasionally in some with a hyperemic mucosa there were hemorrhagic spots.

Bronchial Lymph Nodes.—The bronchial lymph nodes were in most cases (thirty-five) enlarged and swollen to a greater or less degree. In a few cases the enlargement was considerable and the nodes soft and edematous, attaining dimensions of from 25 to 30 mm. In five cases the glands are recorded as not enlarged. In the remaining cases they attracted no notice, and were probably normal in appearance.

Hemorrhagic Pleuritis.—One of the more or less striking, essentially constant gross lesions of influenza was what may be termed hemorrhagic pleuritis. By this is meant a bright or dull red spotting seen through the pleura on the surface of the lung. It appeared to be an extravasation of blood beneath the pleura, or else an extensive and local dilatation of the vessels of the surface of the lungs. These spots varied in size from those of a pin point up to spots of 5 or 6 or 10 mm. in diameter. They were irregular in shape, but in general round. The spots were usually more or less grouped together, and were frequently fused into large, hemorrhagic areas of several centimeters in diameter and of a very irregular shape. This subpleural hemorrhagic spotting might be found on any part of the lung. They were less commonly seen on the upper lobes. Sometimes they were much scattered and few in number, so that they were seen only on close examination. Frequently they were present in large numbers on the diaphragmatic surface of the lungs. They were about as common on the interlobular surfaces of the lungs as on the external surface. The interlobular spotting was more abundant, as a rule, toward the root of the lung than toward the periphery. When fibrinous deposits were on the tous changes in the liver, an acute bronchial lymphadenitis, and a moderate dilatation of the right heart.

Secondarily a variety of other lesions developed, such as lobar and lobular types of pneumonia. The lobar types of pneumonia are not typical of the primary form of that disease. A moderate serous pericarditis may develop; very rarely a serofibrinous pericarditis may arise. The pleuritis may become markedly fibrinous. A true empyema may ensue as the result of the usual exciting organisms, but is uncommon. The secondary changes in the lungs appear to be due to various organisms of greater or lesser virulence which happen to be in the respiratory tract at the time of the original attack.

TRANSDUODENAL LAVAGE IN THE TREATMENT OF POSTOPERATIVE ILEUS

AND OTHER SURGICAL AND OBSTETRIC COMPLICATIONS

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A fatal issue in severe complications after laparotomy is so common that the introduction into surgery of a life-saving method in the treatment of these will be welcome. This report concerns six cases of postoperative ileus, a case of incessant hiccup, and also one of puerperal eclampsia, which were successfully treated by transduodenal lavage; every life was saved.

For those unfamiliar with this method, a few words of explanation will be necessary.

Transduodenal lavage flushes the bowel from pylorus to rectum and brings about powerful stimulation of peristalsis. This is accomplished by inserting a duodenal tube just beyond the pyloric muscle, and allowing a sufficient quantity of fluid to run through the tube into the bowel to produce a thorough flushing. The fluid must be slightly hypertonic, so as to remain unabsorbed in its passage along the intestinal tract.

At the New York Polyclinic Hospital, results were observed from transduodenal lavage in medical cases which led to its employment, there and elsewhere, in six cases of postoperative ileus, of which Case 1, the first, is typical:

Case 1.—A woman, aged 50, had had a severe gynecologic operation. Fecal vomiting set in and continued, although everything was done to counteract the condition. The outcome was no longer in doubt; death was certain. As a last resort, transduodenal lavage was suggested and given a trial. No difficulty was experienced in introducing a Jutte duodenal tube, which comes provided with an obturator. The fecal contents of the stomach were then diluted with warm water and siphoned out with the aspirating apparatus which is part of the outfit, and the tube then slipped at once into the duodenum, as shown by the test mentioned in previous papers. The rest of the technic was the same as usual,[1] except that for the purpose of stimulating intestinal peristalsis, the temperature of the irrigating solution was made higher than usual (from 110 to 115 F.). In fifteen minutes there was a precipitous evacuation followed by others.

In the foregoing case and in each of the subsequent cases, only one lavage was necessary, for as soon as normal peristalsis had been reestablished, it continued without interruption. All six patients made an uneventful recovery.

Another striking case is one of incessant hiccup:

Case 2.—A man, aged about 40, who had been operated on at the Presbyterian Hospital for perforated ulcer of the stomach, two days later began to hiccup incessantly, and continued to do so for ten days. Here, too, everything known had been done, but without beneficial results. The patient was doomed. The hiccup was stopped by one treatment of transduodenal lavage, and the man is alive and has not hiccuped since.

In explaining these results, it seems reasonable to attribute them to the stopping of reversed peristalsis and the reestablishment of normal peristalsis, the probable cause of the fecal vomiting and of the hiccup being reversed peristalsis brought about by the operation.

A case of postpartum eclampsia, successfully treated by transduodenal lavage, is no less remarkable:

Case 3.—A woman residing at Newburgh, N. Y., after a protracted period of vomiting during pregnancy, and after parturition, had suppression of urine and became completely edematous. She was in extreme prostration and had been in coma for twenty-four hours. Dr. Bernard Levinson of that city was called in consultation and administered a transduodenal lavage, which was followed in eighteen hours by another lavage. Shortly after that the urine began to flow freely and the patient rapidly regained consciousness; she is now alive and well. This case illustrates well the stimulating effect of transduodenal lavage.

Toxemia of pregnancy offers a promising field for the employment of transduodenal lavage. A few years ago, McDonald[2] reported twelve such cases, which were successfully treated by one lavage each.

I take this opportunity to say that since my first announcement[3] of this new method, which I named transduodenal lavage, several papers have been written by others, dealing with transduodenal lavage, but under slightly different names. The terms which the writers used have been inapt and misleading; the ingredients employed in my solution have been replaced by others, different in name but identical in action.[4]

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[1] Jutte, M. E.: Autointoxication and Its Treatment by Transduodenal Lavage, Am. J. M. Sc. **153**: 732 (May) 1917; The Technic of Transduodenal Lavage in Office Practice, With or Without Oxygen Insufflation, M. Rec. **92**: 499 (Sept. 22) 1917.

[2] McDonald, E.: Treatment of the Toxemia of Pregnancy by the Duodenal Enema, M. Rec. **86**: 102 (July 18) 1914.

[3] Jutte, M. E.: Transduodenal Lavage: A New Method in the Treatment of Chronic Ailments, with Report of Results in Asthma and Pernicious Anemia, New York M. J. March 16, 1912.

[4] In addition to the references already given, the following will be found of interest:

Aaron, C. D.: Treatment of Intestinal Stasis by Duodenal Lavage, M. Rec. **94**: 268 (Aug. 17) 1918.

Jutte, M. E.: Transduodenal Lavage: Treatment and Report of Some Cases of Chronic Diseases, J. A. M. A. **60**: 586 (Feb. 22) 1913.

Palefsky, I. O.: Irrigation, Transinsufflation and Visualisation of the Intestines by the Duodenal Tube, New York M. J. **102**: 119 (July 17) 1915.

Ramirez, M. A., and Hoguet, J. P.: Ileocecal Insufficiency, New York M. J. **108**: 146 (July 27) 1918.

Treatment of Functional Paralyses.—Functional paralysis and contractures of all kinds are psychogenic and due to an "idea" generally arising in a psychogenic individual. The idea of the disability tends to become fixed and firmly installed in the minds by daily massage and electricity, especially when carried out by sympathetic women. These cases can be cured by faradism and persuasion in two or three sittings. The cases should afterward be treated by appropriate exercises.—Lieut.-Col. F. W. Mott, Preface to Gymnastic Treatment for Joint and Muscle Disabilities.

SUBCUTANEOUS EMPHYSEMA

WITH THE REPORT OF SEVERAL CASES, PARTICULARLY ONE WITH VERY EXTENSIVE GENERALIZED EMPHYSEMA *

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Subcutaneous emphysema is referred to in medical literature under various other names, as for instance, surgical emphysema, cellular emphysema and traumatic emphysema. Subcutaneous emphysema may be defined as a condition in which atmospheric air or other gases are found in the subcutaneous tissues. We are concerned here only with the simple emphysema. The inflammatory or gangrenous emphysema is not included.

The subcutaneous tissues are made up largely of areolar connective tissue, which thus permits of a great deal of distention. In either localized edema or in anasarca the accumulated fluids are in these areolar spaces. Similarly in subcutaneous emphysema the entrance of air into these spaces meets very little resistance, and thus the skin becomes distended to a variable extent. In the article on areolar tissue in Garrish's textbook of anatomy,[1] there is a striking picture, a drawing of a man with generalized subcutaneous emphysema. Besides being present in the subcutaneous tissues, areolar connective tissue is also found abundantly in the cellular tissues surrounding muscles, vessels and viscera. Hence emphysema may also occur in and about the various internal organs. There is a case on record[2] of an extensive emphysema of the internal organs, found in a child after having lived ten years with general emphysema.

ETIOLOGY AND CLASSIFICATION

Congenital Emphysema.—This is a very rare occurrence. Nevertheless, there are a few cases on record.[3] This is either a result of rupture of a few pulmonary vesicles in the act of the first cry, or a result of some congenital malformation of the respiratory passages with the result of an inrush of air into the subcutaneous tissues with the first breath.

Emphysema in Infants.—Rupture of some pulmonary vesicles with the result of subcutaneous emphysema has been observed by various authors.[4] It is generally considered that some congenital weakness of the lung preexisted in these cases. A violent exertion or coughing fit causes a rupture of some pulmonary vesicles, and permits the escape of air into the interlobular or interlobar spaces. From here the air passes along the root of the lung, through the anterior mediastinum to the root of the neck, and may thence spread to the chest and the arms, or all over the body.

Traumatic Emphysema.—*A.* Of External Origin: Various wounds, such as stab wounds produced by a lance or bayonet, may result in an inrush of air into the wound producing emphysema of variable extent. Many such cases have been reported. Some of them have become classical and are frequently cited, such as the case described by Larrey.[5]

Puncture wounds, even such as those produced by an ordinary medium-sized exploratory needle, have been known to produce emphysema, even of a very extensive variety. Evans[6] reports a case of generalized emphysema following an exploratory aspiration of the chest. We have encountered a case of extensive emphysema following the insertion of trochar and cannula for the introduction of a catheter in the treatment of empyema with irrigation of neutral solution of chlorinated soda (Dakin's solution).

Case 1.—A woman, aged 24, with empyema of the right side of the chest, when a trocar and a cannula had been inserted and the trocar had been withdrawn, in order to allow the pus to run out through the cannula, turned unexpectedly, which caused the cannula to slip out of the pleural cavity. Suddenly the patient became quite dyspneic and complained of a distressing sensation of tightness and oppression in the chest. The trocar had become unsterile, and we had to wait for its resterilization. In the meantime, firm pressure was applied to the puncture wound. When the cannula was reinserted the distressing symptoms all disappeared, but distinct subcutaneous crepitus was soon observed extending to the floor of the mouth above, and down to the abdomen below. The air gave rise to no disturbance, was all absorbed at the end of two weeks, and the patient made an uneventful recovery.

In many of these cases it is hard to decide whether the emphysema is of external origin or of internal origin due to an injury to the lung. For instance, there is a case[7] on record of a soldier sustaining a bayonet wound of the buttock, with the development of an extensive emphysema soon afterward. It is difficult to see how a wound in that region could injure any air-containing viscera. Col. Nathan Raw, however, has, in connection with this case, demonstrated on the cadaver that a knife 8½ inches long could be pushed up from the buttock behind the peritoneum along the muscles of the back, pierce the diaphragm and injure the lungs.

B. Of Internal Origin: 1. Gastro-intestinal. Subcutaneous emphysema has been described as a result of the rupture of almost any part of the alimentary canal, as for example the esophagus, the stomach or the rectum.

Pierce[8] describes a case of generalized emphysema in a drunkard that gave neither evidence nor history of any external traumatism. At necropsy there was found an ulcer of esophagus with a sinus leading to an abscess of the stomach situated near the cardiac end. The ulcer had ruptured, with the escape of food into the mediastinum and air into the subcutaneous tissues.

A case of general emphysema following rupture of the stomach is described by Newman.[9] This occurred in an insane patient. At necropsy the lungs and pleurae were found normal. The peritoneal cavity was extremely distended with air, and the stomach was ruptured.

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* From the Surgical Wards of the Waterbury Hospital.

* Read before the Waterbury Medical Association, Feb. 10, 1919.

[1] Garrish, F. H.: A Textbook of Anatomy by American Authors, Ed. 2, 1902, p. 48.

[2] McNab, D. R.: Med. Times and Gaz. n. s. **2:** 314, 1843.

[3] Lvov, M.: O podcozhnoi emphysemi rasvivaousheisa vo vremja rodov. (On congen. subcut. emphysema) Med. Vestnick **20:** 265, 274, 1880.

[4] Ozanam: Sur les ruptures pulmonaires ches les enfants, et de l'emphysème que lui succède, Arch. gén. de méd. 5 S. **3:** 31-53, 1854. Welchel, H. C.: Subcutaneous Emphysema in a Child Due to Foreign Body in Bronchi, J. M. A. Georgia **6:** 249 (April) 1917. Le Soudier: Arch. de méd. d. enf. **20:** 360 (July) 1917.

[5] Larrey: Mémoire de chirurgie militaire, English translation by R. W. Hall, Baltimore, 1814.

[6] Evans, J.: General Subcutaneous Emphysema Following Aspiration of Chest, Lancet **1:** 220, 1889.

[7] Hayward, J. D.: Emphysema and Punctured Lung from Bayonet Wound of Buttock, Lancet **2:** 199 (Aug. 11) 1917.

[8] Pierce, W. H.: An Unusual Cause of Emphysema: Necroscopy, Lancet **2:** 1221, 1886.

[9] Newman: General Emphysema Following Rupture of Stomach, Lancet **2:** 728, 1868.

Erichsen[10] reports a case of perineal emphysema spreading to the upper parts of the body from puncture of the bladder through the rectum, for retention.

2. Air Passages: What is true of the alimentary canal is true of the air passages. The rupture of almost any part may produce the emphysema, for example, the nose and accessory sinuses, the larynx, trachea and bronchi, or the lungs. Compound fracture of the nose has been known to produce quite extensive emphysema. It most frequently follows an attempt to blow in order to dislodge an annoying blood clot. Similarly, emphysema has been known to follow injuries to the accessory sinuses, especially the frontal sinus. The earliest case of this kind on record is probably the one reported by Morgan:[11]

> These cases are evidently not very rare. We have encountered three such cases within the last three years. One of them presented an emphysema extending down to his abdomen. Necropsy showed a fracture of the frontal bone through the frontal sinus.

Subcutaneous emphysema may also follow injury to the antrum of Highmore and to the mastoid process.[12]

Attempts at inflating the middle ear not infrequently produce a submucous emphysema of variable extent. Instead of entering the eustachian canal, the tip of the instrument is forced under the mucous membrane, and in the process of inflation air is forced into the submucous tissues much to the patient's alarm. In some cases the emphysema thus produced may be quite extensive, and has been known[13] to reach the root of the neck.

Emphysema may be caused by tuberculosis and malignancy of the larynx,[12] or by wounds of the trachea. A tracheotomy may give rise to very extensive emphysema if the external opening is too small.[14] Erosions following foreign bodies in the bronchi have been known to produce emphysema, such as in a case reported by Whelchel.[15].

Wounds of the lungs quite frequently occasion emphysema.[16] The overlying skin may or may not be affected. It is also very commonly associated with, or rather a result of, fracture of one or more ribs. Localized emphysema is very common in connection with these accidents. They are frequently overlooked. As a rule, these cases are associated with very extensive injuries, such as result from being run over, falling down stairs, etc. The mechanism of the phenomenon is simple. The point of the fractured rib injures the costal pleura, visceral pleura and lung tissue, but not the overlying skin. During inspiration the lung expands and air rushes into the pleural cavity through the laceration. During expiration the lung collapses; the laceration becomes closed, so that the expiratory effort can not drive the inspired air back through the same opening, but drives it into the distensible subcutaneous tissues instead.

Emphysema of the Tissues Surrounding an Abdominal Wound After Laparotomy.—This is a rather curious manifestation, yet on reflection one need not marvel over its occurrence. During the operation air enters the peritoneal cavity, and we may readily assume that at times quite an amount may remain in the cavity after the peritoneum is sutured up. Under normal conditions the enclosed air becomes absorbed very readily. Occasionally, however, it may remain for a long time, and should the patient strain or cough, the enclosed air may find its way through the sutured peritoneum and into the subcutaneous structures.

Case 2.—A man, aged 25, had appendectomy performed, in January, 1917. It was an interval operation, and it seemed perfectly safe to close the abdomen without drainage, which was done. Two days after the operation the patient developed a distressing cough. The temperature was 101.4 F., pulse 110, respiration 28. Next day the patient's temperature rose to 102, and he also complained of a discomfort about the incision. The wound was dressed, January 28, the fourth day after the operation. There were no signs of inflammation, but gaseous crepitus was distinctly felt around the wound and extended for a distance of 4 inches to each side. The patient's temperature was without a doubt due to bronchitis. The air was all absorbed at the end of fourteen days, and the patient made an uneventful recovery.

Similar cases have been recorded from time to time. Von Graefe[17] reported two such cases in 1894. Von Caspersohn[18] reported one in 1895. The air, in his case, showed no tendency to be absorbed, and incision was made on the twentieth day after operation. Von Heil[19] reported one case in 1896 and another in 1900. Madlener[20] has written a comprehensive article on this subject, and estimated the number of cases reported to be above twenty-five.

Spontaneous Emphysema.—By this term is meant the occurrence of emphysema after extensive subcutaneous extravasation of blood. This subject has been widely disputed, and many doubt the possibility of its occurrence. Nevertheless, many authorities attest to its possibility. Valpeau described it as occurring not infrequently in connection with fractures, particularly of the shoulder.[21] According to H. Fischer,[22] the emphysema appearing in these extensive hematomas is due to gases produced by the action of acids, such as lactic acid, on the contained blood. He demonstrated these acids in contused tissues, and has also produced emphysema experimentally by injecting lactic acid into hematomas experimentally produced in animals. In one such experiment these gases were demonstrated to be carbon dioxid.

Emphysema During Labor.—This is not encountered very frequently; nevertheless there are a number of cases on record, some of them very extensive in nature. It usually occurs in the second stage of labor. during the period of expulsion. Owing to excessive straining some pulmonary vesicles rupture, and emphysema results. It becomes manifested first at the root of the neck. Judging from the remarks made by the authors that have reported cases, the condition is not seen very commonly, most of them not having encountered a similar case before. Some of the more recently reported cases are by Milne,[23] Murray,[24] and Fabre and Trillat.[25] Scheffelaar Klots[26] has written a comprehensive article on this subject and has collected forty cases from the literature.

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[10] Erichsen: Perineal Emphysema, Lancet **1**: 89, 1860.

[11] Morgan: Fracture of the Frontal Bone into the Frontal Sinus with Extravasation of Air Into the Cellular Membranes of the Eyelids, Lancet **10**: 31, 1826.

[12] Lexer, Erich: General Surgery, 1908, p. 523.

[13] Personal communication from Dr. Carl C. Munger, Waterbury, Conn.

[14] Ashley and Wright: Diseases of Children, American Ed., 1893, p. 186.

[15] Whelchel, H. C.: Subcutaneous Emphysema in a Child Due to Foreign Body in Bronchi, J. M. A. Georgia **6**: 249 (April) 1917.

[16] Since this paper was written, Clark and Synnott (Am. J. M. Sc. **158**: 219-221 (Feb.) 1919) have reported twenty cases of subcutaneous emphysema observed in connection with influenzal pneumonia during the epidemic at Camp Dix. The "gas" first made its appearance in the subcutaneous tissues at the base of the neck "anteriorly and laterally and over the upper portion of the chest from the clavicle to about the third rib." In one of the cases the emphysema extended to the chetks, eyelids, arm, abdomen and flanks. From postmortem investigations made in three of the cases, the origin of the gas was from "weakened alveoli of the lung under pressure, . . . and reached its distribution as a result of purely mechanical factors."

[17] Von Graefe: München. med. Wchnschr., p. 823, 1894.

[18] Von Caspersohn: Zentralbl. f. Gynäk., p. 1328, 1895.

[19] Von Heil: Arch. f. Gynäk. **52**: 435, 1896; München. med. Wchnschr., p. 1208, 1900.

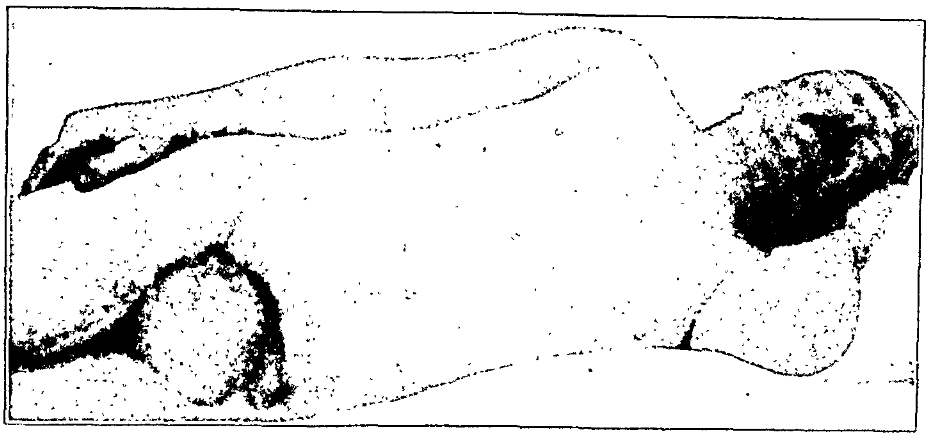
[20] Madlener, Max.: Das Haut-Emphysem nach Laparatomien, Monatschr. f. Geburtsh. u. Gynäk. **13**: 1901.

[21] Tillman, H.: Textbook of Surgery **1**: 474, 1901.

[22] Fischer, H.: Ueber das traumatische Emphysem, Samml. klin. Vortr., Chirurgie, pp. 427-444, 1874.

Generalized Emphysema.—In reviewing the literature, one finds reports of a considerable number of cases of generalized emphysema. Nevertheless, one may conclude that it is not very common, as is evidenced by the remarks of a great many of the observers that it is the only case of the kind they have ever seen. When well developed, the condition is so striking and so impressive that it may be safely assumed that the cases in the literature are the records of perhaps the greatest percentage of the cases observed. We may, therefore, be justified in reporting the following case in detail:

Case 3.—*History.*—J. S., a farm hand, aged 69, with a negative past history, fell down five steps, Jan. 1, 1918, and struck the right knee and the side of the chest. He complained of sharp pain in the chest, but with slight help he was able to walk outdoors and for some distance toward the barn. Very soon, however, he felt worse and was carried upstairs and put to bed. About two hours later he noticed that he was beginning to be puffed up, and by morning he found that his eyes were so swollen that he was unable to open them. Dr. Robbins was called in and advised removal to the hospital. The patient was admitted to the Waterbury Hospital, January 2, at 2 p. m.



Generalized emphysema: condition day after admission to the hospital.

Examination.—On admission the patient was found to be markedly dyspneic and universally bloated, presenting a condition not unlike that of extreme anasarca from Bright's disease. His temperature on admission was 99 F., pulse 94, respiration 24. On physical examination this generalized swelling was found to be an emphysema involving the entire body, with the exception of the scalp, palms of the hands and soles of the feet. The eyes were so puffed up that no effort availed to open them. The lips were extremely swollen, making articulation and even opening of the mouth very difficult. The voice was very high-pitched and cackling in character, not unlike that of a hen. The penis was extremely swollen and distorted, and the patient had been unable to void for ten hours prior to admission. The scrotum was as large as a good-sized grapefruit, and the abdomen gave the impression of extreme ascites.

On palpation the characteristic crackling crepitus could be felt all over the body except the scalp, the palms of the hands and the soles of the feet. Bony crepitus could be felt over the lower ribs on the right side, but it was impossible exactly to determine which ones were involved. The apex beat could not be felt. On auscultation over the site of fracture a shrill, high-pitched sound could be heard, inspiratory in time, and a distinct, loud, jarring noise during expiration. Both sounds were accompanied by numerous crackling crepitations evidently right under the stethoscope. The heart sounds were distant and hard to elicit. The neck was 19 inches in circumference, the forehead, 23 inches, the chest at the level of the axillae, 43 inches, and at the level of the nipples, 38½ inches, and the middle of the arm, 15 inches. It is probably useless to cite all the other measurements taken. The condition of the patient is shown in the accompanying figure.

Subsequent Course and Treatment.—The patient was quite dyspneic, rather cyanosed, coughed a great deal, and expectorated some tenacious sputum tinged with blood. The patient's chest was strapped tightly with adhesive straps and one-fourth grain of morphin given hypodermically, and one-sixth grain of morphin was left to be given rather freely as circumstances required. The patient was somewhat more comfortable after the morphin and strapping, but was still in considerable distress the first night. Next morning, however, he felt much better. The emphysema had not increased, and the pain in the chest was much less. The dyspnea was less urgent, although swallowing was still difficult. In view of the slight improvement, we decided to leave the patient alone and to make no punctures to serve as outlet. For the next two days the patient's condition remained about the same; but afterward rapid improvement was noticed, and by the end of the week the patient's condition seemed to be exceedingly good; in fact, he seemed to be out of danger.

Fluoroscopic and roentgenographic examinations made six hours after the strapping of the chest showed the fractured ribs to be in good position.

Physical examination of the chest at the end of the first week was still rather difficult because of the interference of the superficial layer of air; nevertheless, the affected side was distinctly tympanitic to percussion as compared with the opposite side. On auscultation the breath sounds were feeble and distant as compared with the exaggerated breath sounds on the opposite side. Metallic tinkling and the coin sound, or the *bruit d'airain* of Trousseau, were distinctly heard. The patient evidently had a pneumothorax. Succussion sounds were negative.

Examination of the urine, blood and sputum disclosed nothing of special interest.

The patient continued to make an uneventful recovery. By the end of ten days practically all the air had disappeared except in the arms and scrotum, where it could still be detected for another week, at which time it had entirely disappeared. He was a fairly well developed man, thin in face and neck and otherwise without much subcutaneous fat. He was discharged, January 30, cured.

ANATOMIC EXTENT OF SUBCUTANEOUS EMPHYSEMA

The exact distribution of the emphysema varies in different cases. It depends on the extent of adherence of the skin to the subjacent structures. The scalp, the palms of the hands and the soles of the feet are very seldom involved. I could find no mention in the literature of any cases in which the emphysema extended to these parts of the body. In some cases, because of scars or adhesions from other causes, certain parts that are usually affected may escape, as was

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23. Milne, G.: *Subcutaneous Emphysema* During Labor, Brit. M. J. **1**: 262 (Feb. 24) 1917.

24. Murray, J.: Surgical Emphysema During Parturition, Brit. M. J. **1**: 14 (Jan. 6) 1917.

25. Fabre and Trillat: Emphysème sous-cutane au cours de la periode d'expulsion, Bull. Soc. d'obst. de Paris **11**: 44, 1908.

26. Scheffelaar Klots: Ztschr. f. Geburtsh. u. Gynäk. **41**, No. 3.

true in a case reported by Buchanan,[27] in which, though the chest, abdomen and face were extremely swollen, the eyes escaped entirely. The part over the patella frequently escapes, but in the case just reported there was as much air over the patella as over the rest of the limb.

INDUCED SUBCUTANEOUS EMPHYSEMA

In 1885, Silvester[28] published an article advocating the employment of induction of emphysema as a life-saving device. He demonstrated that if a dog "be blown up" he will support and prevent from drowning one or more human beings. Before the Royal Academy of Science he introduced a cannula into an individual's wrist and induced a generalized emphysema with the aid of a small pump. For the self-induction of emphysema he advocated a still "simpler" device. When one is in peril from drowning one may puncture, with any sharp instrument, the floor of the mouth near the base of the gums. With the finger of the other hand as a guide, the tissues are penetrated till the superficial fascia of the neck is reached. The mouth and nostrils are closed, and with each expiratory effort air enters the subcutaneous tissues and extensive emphysema may thus be produced, enough, according to the author, for the individual to float an indefinite length of time. This measure has evidently never been received with enthusiasm, not even during war time.

Complications of Subcutaneous Emphysema.—These are (*a*) extension to the mediastinum; (*b*) extension to the internal organs; (*c*) hemopneumothorax and pyopneumothorax, and (*d*) erysipelas and cellulitis.

PROGNOSIS

Generally speaking, prognosis is good; but it depends on the origin and the complications. The extent of the emphysema seems to play only a small part. The emphysema brought about by the rupture of the stomach or intestine is uniformly fatal. The emphysema resulting from injury to the lung generally has a good prognosis except for the complications. Extension of the emphysema to the mediastinum is uniformly fatal. We found in the literature twenty cases of generalized emphysema produced by fracture of ribs, with no external openings; of these, three cases ended fatally (15 per cent.). Death in two of these cases resulted from collapse of the lung and hemopneumothorax, and one patient died from extension of the air into the mediastinum. Absorption of the air in emphysema generally takes place in from one to three weeks.

TREATMENT

That the slight and limited subcutaneous emphysema requires no special treatment and no operative procedure is universally accepted. About the extensive and generalized emphysema, the opinions differ. In consulting some of the old authors on surgery, we find that they also disagreed about the procedure in these cases. Abernethy,[29] for instance, was of the opinion that these patients do best when left alone. In two cases in which he operated death ensued. He also recommended the firm bandaging of the chest with towels or adhesive plaster:

> In whatever state the lungs happen to be when they are wounded, a bandage, if it can be borne, seems to me extremely useful. By means of it the pain and irritation which the motion of the fractured ribs must otherwise occasion are in a great measure or entirely prevented.[30]

Samuel Cooper,[31] on the other hand, recommends multiple incisions and condemns the use of bandages. Larrey[5] also recommends multiple incisions.

Of the more modern authors, Bryant[32] and Lucas[33] both recommend multiple punctures. Von Bramann[34] advocates the insertion into the pleura of a tube provided with a valve which prevents the escape of air into the tissues. Lexer[35] is in favor of bold surgical procedure. He advises the stopping of the exit of air by means of tamponing, suturing the pleura or the insertion of the Bramann tube just mentioned. Keen,[36] on the other hand, advises leaving it alone unless the distress is extreme, when multiple punctures are advocated. Vaughan[37] says that emphysema "requires no treatment unless excessive, when multiple punctures in the skin and the application of bandages to the chest may be necessary."

From a review of the modern literature the general opinion seems to be that subcutaneous emphysema generally requires no special treatment beyond that of the condition causing it. It does not materially influence the prognosis, except when the emphysema extends to the mediastinum and internal organs. In emphysema ocurring during labor, the patient should be instructed to be very quiet and not to strain, and the child would best be delivered with forceps. In all cases of emphysema, coughing and straining should be allayed by the aid of morphin. Strapping of the chest should be tried, but should be abandoned if the pain and discomfort are aggravated thereby. Punctures and incisions are generally unnecessary. and should be made only in extreme cases.

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27. Buchanan, G. B.: Note on a Case of Extensive Surgical Emphysema, Lancet 2: 1682, 1907.

28. Silvester, H. R.: Lancet 1: 11, 1885; 2: 418, 1885.

29. Abernethy, John: Surgical Works, London; Longman, Hurst & Co., 1816, pp. 170-187.

30. Abernethy, John: Surgical Works, p. 182.

31. Cooper, S.: Surgical Dictionary, Ed. 6, New York, Harper and Brothers 1: 342, 1836.

32. Bryant, Thomas: Rapid and Extensive Emphysema Treated at Once with Marked Relief by Multiple Punctures of the Skin, Brit. M. J. 1: 163, 1884.

33. Lucas, R. C.: A Case of Traumatic Emphysema; Tapping; Recovery, Brit. M. J. 1: 812, 1895.

34. Von Bramann: Ueber die Bekämpfung des nach Lungenverletzung auftretenden allgemeinen Körperemphysems, Chir. Kongr. Verhandl. (1893) Disk. König.

35. Lexer, Erich: General Surgery, 1908, p. 524.

36. Keen, W. W.: An American Text Book of Surgery, Philadelphia, W. B. Saunders & Co., 1903, p. 710.

37. Vaughan, G. T.: The Principles and Practice of Surgery, Philadelphia, J. B. Lippincott Co., 1903.

Mosquito Eradication.—The report of the Atlantic County Mosquito Extermination Commission for 1918 shows that during 1918 there were constructed 407,839 feet of ditches, and that since 1913, when the work began, 5,866,514 feet of ditch have been made. This has resulted in a decided improvement in the mosquito situation in Atlantic City and the surrounding resorts and towns throughout the county, though it is a constant fight to keep what has been gained by the preventive operations. Mosquitoes of the salt marsh variety, as well as the common house mosquito, must be constantly fought; and it is a matter of persistent vigilance to prevent the breeding of the pests in every hole or receptacle that will hold even a small quantity of water. Citizens do not always cooperate as they should about their places. During 1918, Atlantic City was free from mosquitoes except on two nights, and the surrounding resorts had almost as good a record. During the year, 1,124 acres of salt marsh were drained, and previously 18,756 acres had been drained. The total area drained constitutes about 30 per cent. of the area requiring drainage. The expenditures for 1918 were about $23.000.

MAGNESIUM AND CANCER *

SHIGEMITSU ITAMI, M.D.
NEW YORK

There has appeared recently an article by Dubard,[1] wherein the author suggests the administration of magnesium salts to cancer patients who have undergone operation, in order to lessen the chances of recurrence. The same agent had been used some twenty years before by Gaucher and Herscher,[2] who reported favorable results after the application of a paste of magnesium chlorid to an ulcerated epithelioma of the lower lip. Regnault,[3] also, was encouraged by the outcome following the internal administration of magnesium salts in cases of inoperable cancer, and has accordingly been using them systematically in the hope of avoiding recurrence.

It is fortunate that experimental cancer research permits such suggestions as these to be examined in the laboratory, for the clinician's obligation to save human lives imposes on his investigations a restriction that does not hamper the experimental pathologist.

A laboratory devoted to cancer research, again, can command various types of tumor, such as a transplantable mouse carcinoma (Bashford's 63), which grows progressively, another carcinoma (Bashford's 206), which often recedes after growing for two or three weeks, a number of spontaneous mouse carcinomas, etc.

Of these three types, the two transplantable carcinomas should yield more easily to therapeutic attack than the spontaneous growths, since the former consist of mouse cells growing in mice other than those in which they first became cancerous; hence it may be assumed that they are proliferating under conditions less favorable than those surrounding a spontaneous neoplasm, whose cells are those of the very mouse to which they are native. And of the two transplantable growths, 206 should be more easily influenced by treatment, since its cells are so delicately balanced that this tumor often regresses without any treatment whatsoever.

Yet the intravenous injection of magnesium chlorid in doses of from 0.003 to 0.007 gm., an amount which is relatively five or eight times larger than the toxic dose for man (3 to 4.5 gm.), was without effect on these two mouse tumors, even when two or three treatments were given within a few days (Fig. 1). This was also the case when medication was begun within twenty-four hours after introduction of the tumor graft—that is, before it had become vascularized and at a time when it was therefore most vulnerable (Fig. 2). Spontaneous neoplasms, also, pursued their course quite uninfluenced by the treatment (Fig 3). The arrows show the time when magnesium was injected.

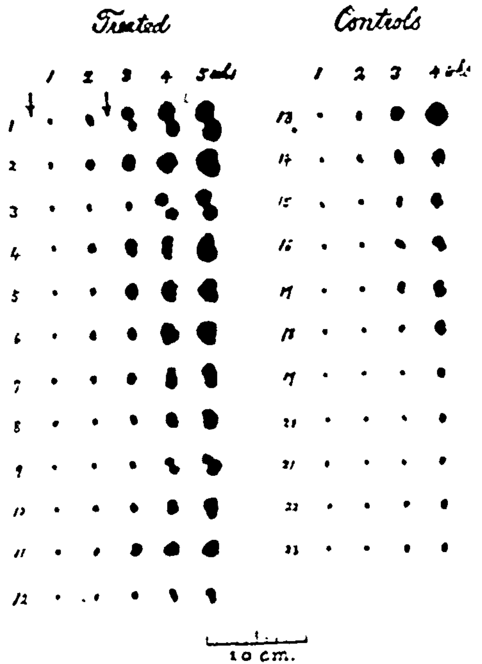

Fig. 1.—Mice 1 to 12, bearing Carcinoma 63, were treated twice with magnesium—five and sixteen days after the tumor was inoculated. Mice 13 to 23 were normal untreated controls. At the end of the fourth week the tumors in the treated animals were larger than those in the controls.

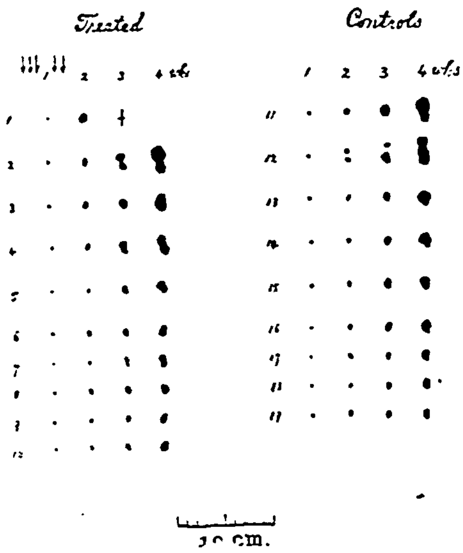

Fig. 2.—Mice 1 to 10, bearing Carcinoma 206, were treated five times with magnesium—two, four, six, eight and ten days after the tumor was inoculated. Mice 11 to 19 were normal untreated controls. The magnesium exerted no effect on the growth of the tumors.

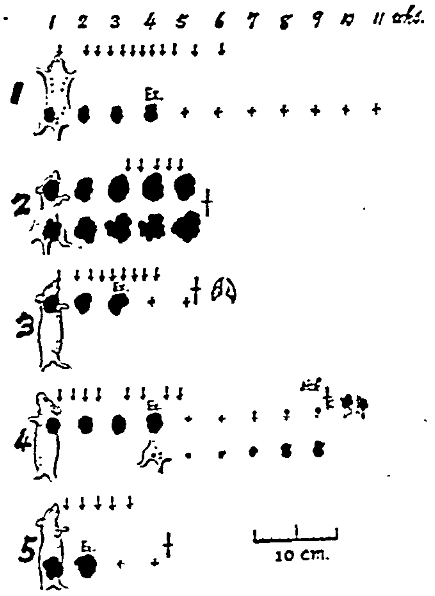

Fig. 3.—Mice 1 to 5, bearing spontaneous carcinomas, were treated from five to eleven times with magnesium, without influence on the growth of their tumors. In Mouse 4, a recurrence appeared within the third week after the last (eighth) treatment; this is shown at the ends of the small vertical which, by convention, represent the operation scar. Furthermore, a new growth was discovered in the right groin, just after the sixth treatment, and at necropsy the lungs were found to be extensively involved by metastases. In Mouse 3, also, the treatment did not prevent the occurrence of metastases in the right lung.

Not only were no tumors cured in 175 animals, of which the three groups here reproduced are a fair sample, but in one mouse which was being injected with a view to preventing, if possible, the recurrence of a spontaneous neoplasm previously extirpated, a secondary growth appeared about three weeks after the eighth injection; furthermore, a new spontaneous tumor arose during the treatment (Mouse 4, Fig. 3). Both the recurrent and the new tumor must have consisted at first of a small group of cells; yet even these growths, which might almost be called incipient, were entirely untouched by magnesium.

Needless to say, all the tumors concerned in the experiment were submitted to microscopic examination, in order that their carcinomatous nature might be proved.

Since carcinomas of the mouse are quite comparable to those in man, arising in animals that have

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* From Columbia University, George Crocker Special Research Fund, F. C. Wood, director.

[1] Dubard: Bull. de l'Acad. de méd. **79:** 295, 1918.

[2] Gaucher and Herscher: Ann. de dermat. et de syph. **10:** 964, 1899.

[3] Regnault: Bull. gén. de thérap. **168:** 737, 1915-1916; Bull. de l'Acad. de méd. **80:** 29, 1918.

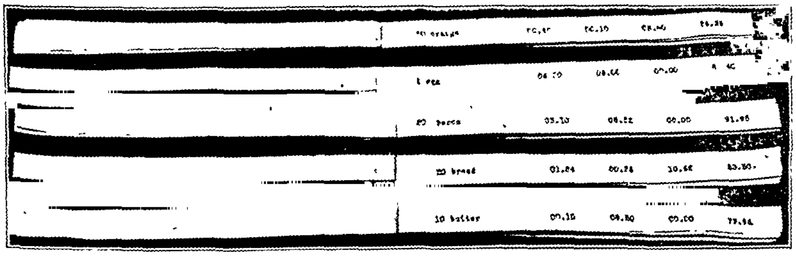
passed middle life, invading the surrounding structures, metastasizing by both blood and lymph channels, and ultimately destroying life, these experiments cast serious doubt on the value of magnesium in the treatment of human neoplasms. In fact, the assertion may be ventured that this element will prove to be useless. It is in order that this knowledge might be gained as quickly as possible and with the sacrifice of animal rather than of human lives, that the experiments described in this paper were undertaken.

Clinical Notes, Suggestions, and New Instruments

A FILING METHOD HELPFUL IN FIGURING CALORIC FOOD VALUES

Rose Donk, M.D., Buffalo

The figuring of diets that shall have certain desired values in protein, fat and carbohydrate is tedious and time consuming. Attempts to overcome this difficulty by the use of approximate values are of most uncertain success. The tables procurable for common measure are incomplete, and their use not only does not save time, but is likely to cause gross error.



Booklets arranged to show values for 50 gm. of orange, 1 egg, 20 gm. of bacon, 20 gm. of bread and 10 gm. of butter. The first column of figures represents the number of grams of protein in each; the second, the number of grams of fat, and the third, of carbohydrate. The fourth column represents the number of calories.

It is necessary to use the metric system. The diet is to be made out according to the number of grams of protein, fat and carbohydrate that are desirable.

The tables of Atwater and Bryant[1] are most convenient as a basis of computation. These tables give the percentage of protein, fat and carbohydrate in various foods. They give the fuel value per pound. The fuel value per hundred grams would be more convenient for the present purpose and it must be figured out. If, in estimating a diet, one refers directly to the tables, one must estimate the caloric value by multiplying the number of grams of protein by 4.1, the number of grams of fat by 9.3, and the number of grams of carbohydrate by 4.1, that is, by the fuel value for a gram of each. For example, 100 gm. of boiled potato (Atwater and Bryant) contain 2.5 gm. of protein, 0.1 gm. of fat and 20.9 gm. of carbohydrate.

The caloric value of 2.5 gm. of protein equals 2.5 multiplied by 4.1, or 10.25 calories.

The caloric value of 0.1 gm. of fat equals 0.1 multiplied by 9.3, or 0.93 calory.

The caloric value of 20.9 gm. of carbohydrate equals 20.9 multiplied by 4.1, or 85.69 calories.

The total number of calories for 100 gm. of potato equals 96.87.

From these values for 100 gm., one then figures the values for whatever amount is to be ordered.

Any system in which these multiplications and additions are already made out is very helpful. Moreover, if the values are figured in multiples, one gets directly the number of grams of protein, fat and carbohydrate and the total fuel value for 10, 20, 30, 40 or more grams of the food, as may be desired.

Ordinary index cards may be used, arranged as shown in the accompanying tabulation.

In using the card system one, of course, copies the values for the various foods in the amounts desired. Additions are then made to get the totals for the day.

INDEX CARD SHOWING THE VALUES FOR ORANGE IN MULTIPLES OF TEN

Gm. Orange	P.	F.	C. H.	Cal.
10	.08	.02	1.16	5.27
20	.16	.04	2.32	10.54
30	.24	.06	3.48	15.81
40	.32	.08	4.64	21.08
50	.40	.10	5.80	26.35
60	.48	.12	6.96	31.62
70	.56	.14	8.12	36.89
80	.64	.16	9.28	42.16
90	.72	.18	10.44	47.43
100	.80	.20	11.60	52.70
110	.88	.22	12.76	57.97
120	.96	.24	13.92	63.24
130	1.04	.26	15.08	68.51

The desire to avoid this copying of figures leads one to search for a device offering this further convenience. The following serves that purpose:

Small, narrow booklets are made, as illustrated herewith. For example, one can open the bacon booklet at 10, 20 or more grams as may be desired. The egg booklet may be opened at one or two eggs. The number of grams of protein, fat and carbohydrate and the caloric value are at hand. No copying is necessary, as the booklets may be placed one below the other, the foods desired for the day being chosen from the stock of booklets. Once the diet is thus arranged, additions are made to find if the totals for the day are satisfactory. If such is not the case, more or less of a given food may be substituted by turning the leaves of the particular booklet to the corrected quantity.

These booklets were made by typing from the original card index system. The tabulating key was useful to keep spacing uniform. A photograph trimmer was used to cut the typewritten sheets into narrow strips. Binding was done by the use of punch and brass eyelets. Adhesive plaster is useful to reinforce the binding.

In actual use in the laboratory, it has been found convenient to hold the booklets in position by the use of thumb tacks stuck through the eyelets, an ordinary kitchen table being used for thus laying out the menu.

The time required for computing diets by this record system is relatively small. It likewise diminishes the chance of arithmetical error.

WATER ABSORBING CAPACITY OF DUSTING POWDERS*

Torald Sollmann, M.D., Cleveland

The value of dusting powders is determined partly by their capacity for absorbing or retaining excessive fluid, for example, from the skin, from open wounds, from the intestine in dysentery, etc.

RELATIVE WATER CAPACITY OF DUSTING POWDERS, ARRANGED IN ORDER OF EFFECTIVENESS

Powder Tested	Weight of Water Held by 3 Gm. of Powder	Retained Water as Per Cent. of the Powder
Starch (corn)	2.39	80
Kaolin	2.19	73
Fullers' earth	2.09	70
Precipitated calcium carbonate	1.94	65
Talcum	1.84	61
Prepared chalk	1.59	53

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[1] The Chemical Composition of American Food Materials, Bull. 28, U. S. Dept. Agr.

* From the Pharmacological Laboratory of the Western Reserve University School of Medicine.

These uses suggested the desirability of ascertaining the relative water absorbing capacity of these dusting powders. This was done by shaking 3 gm. of the powders with an excess of water, throwing on a filter and permitting to drain quite thoroughly, and then weighing the moist powders. All experiments were made at the same time, so as to make the results comparable. They are shown in the accompanying table.

CONCLUSIONS

The commonly used dusting powders do not differ very materially in their capacity for holding water. However, starch, kaolin and fullers' earth are more effective than chalk or talcum.

NEW ARM BOARD*

Vernon C. David, M.D. (Chicago)
Major, M. C., U. S. Army
Limoges, France

One of the most useful improvisations made in the splint room of U. S. Army Base Hospital 13 was an arm board designed by Private Harold E. Poff, who, prior to his entrance into Base Hospital 13 as a patient, had never been inside of an operating room. This arm board has numerous advantages over an arm board that must be placed under the patient and which has a limited degree of adjustability.

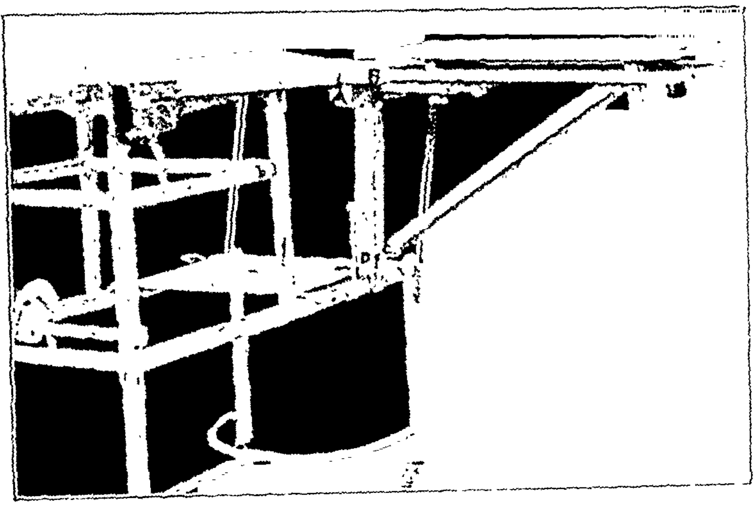

Fig. 1.—Arm board attached to operating table: *A*, groove fitting edge of table; *B*, beveled edge of a fixed semicircular board around which the arm board rotates; *C*, ball and socket joint allowing rotation of support of the arm board; *D*, sliding catch to attach apparatus to operating table.

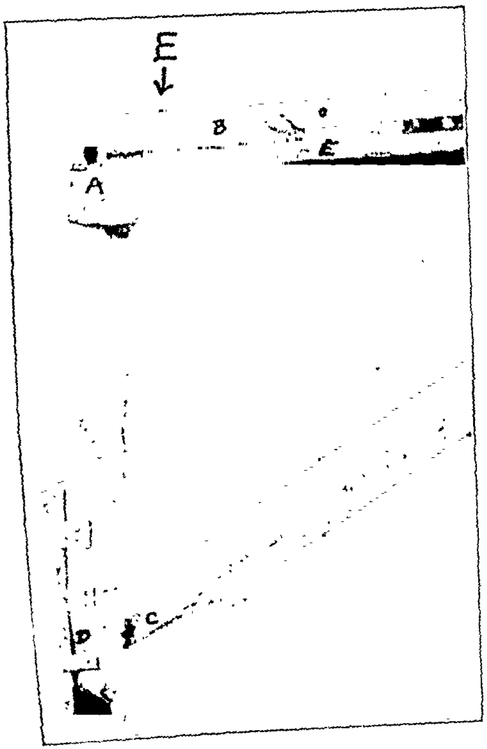

Fig. 2.—Details of arm board.

The accompanying illustrations show the apparatus as made by Private Poff out of such simple materials as were at hand. It is the purpose to submit the design drawn by Private Joseph Conklin to an instrument maker on our return to the United States and have a board made.of aluminum embodying a few improvements which have suggested themselves.

The advantages of this arm board to us have been: (1) its rapid application to or removal from any standard operating room table without moving the patient; (2) a free arc of rotation in the horizontal plane, making the apparatus suitable for either arm and enabling the operator to easily

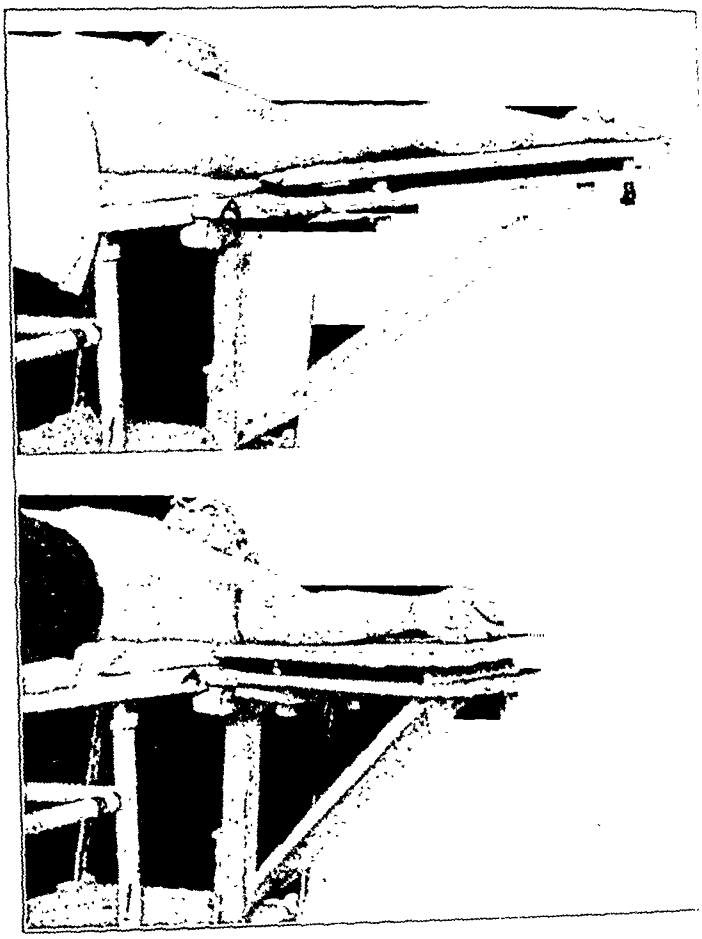

Fig. 3.—Different positions of arm board in a horizontal plane aro the semicircle at *A*.

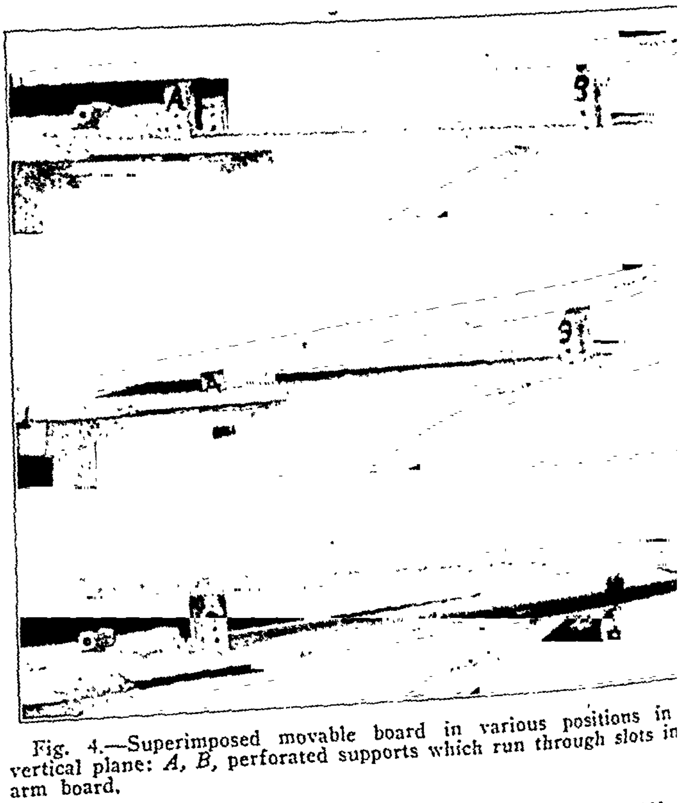

Fig. 4.—Superimposed movable board in various positions in vertical plane: *A*, *B*, perforated supports which run through slots in arm board.

change the degree of abduction of the arm, and (3) adjustability of the arm in the vertical plane, making it sible to change the degree of flexion of the arm.

The arm board is attached to the operating table by m of a groove at each end of an upright. The upper gr (Figs. 1 and 2 *A*) fits under the vertical edge of the t and the lower groove (Figs. 1 and 2 *B*) over the rod run beneath the table, where it is held by a movable catch.

The horizontal rotation of the board is made possible the rotation of the board around a fixed semicircle of w the circumference of which is beveled at the expense o upper surface (Figs. 1 and 2 *B*). The part of the arm board in contact with the semicircle is also beveled at the expense of its under surface. The stationary semicircular piece and the movable arm board are held together at this beveled joint by a small board beneath the arm board, which is attached to the arm board and to a screw in the center of the fixed semicircular piece (Fig. 2 *E*).

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*From Base Hospital No. 13.

The arm board is supported by a board running from the upright attached to the operating table to the outer end of the arm board. In order to allow rotation of this piece, a ball and socket joint is provided at its junction with the upright attached to the operating table (Figs. 1 and 2 *C*).

To allow a change of position of the patient's arm in the vertical plane, a superimposed board, the same size as the arm board and supported by four legs, is employed. These supports run through slots in the arm board proper; and by means of pegs inserted in holes in the supports, the outer or inner end or both ends of the superimposed board may be raised. This superimposed board may be removed entirely, but we have found it to have definite advantages in obtaining stability of the patient's arm.

The degree of adjustability of the board in the horizontal plane, increasing the abduction or adduction of the arm, is shown in the accompanying illustrations. In the illustrations the foreshortening lessens the apparent degree of rotation, which may be seen by noting the change in the patient's axillary fold.

A CASE OF CONGENITAL MALFORMATION OF THE LEFT FOREARM WITH ABSENCE OF THE HAND

J. J. Kurlander, M.D., Cleveland

B. C., a boy, aged 9 years, is healthy and normal in all respects except for the left upper extremity, which at first sight resembles very closely an intra-uterine amputation through the upper third of the forearm. The humerus is normal in size and function. There is normal range of motion at the elbow. The radius and ulna are palpable, and at their distal end is a small piece of bone, to which is attached a flexor and an extensor tendon. This small bone, evidently a rudimentary metacarpal bone, can be very easily flexed and extended. The stump is well shaped and padded.

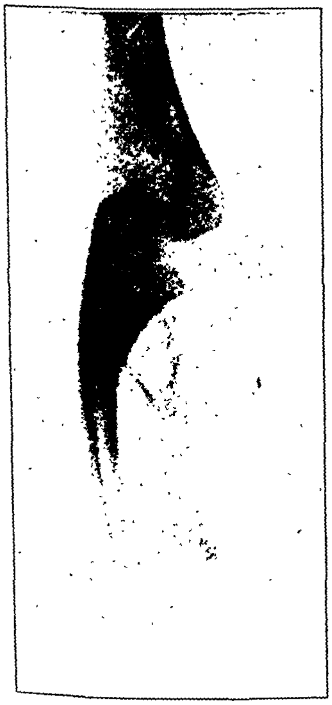


Fig. 1.—Congenital malformation of forearm, lateral view.

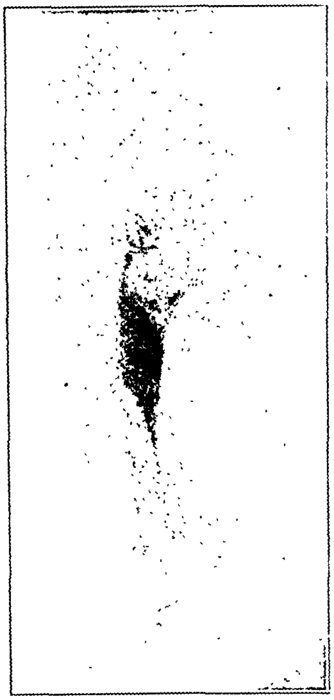


Fig. 2.—Congenital malformation of forearm, anteroposterior view.

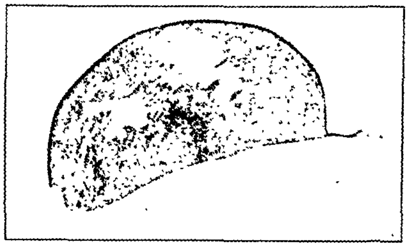
The roengenograms show that the condition is not an intra-uterine amputation, since both the radius and the ulna are practically perfectly formed, being only half or one third the normal length. There is complete absence of carpal and metacarpal bones, with the exception of the single rudimentary metacarpal bone, and absence of phalanges. When the boy becomes older, an artificial arm will be ordered.

630 Osborn Building.

HERNIA OF THE ENTIRE STOMACH, RESULTING FROM STAB WOUNDS, SUCCESSFULLY REDUCED WITH RECOVERY

Carlos C. Booth, M.D., Youngstown, Ohio
Surgeon, Youngstown Hospital

During my recent term of service, I was called at 4 a. m., Oct. 1, 1918, to see J. L., aged 41, a laborer, who had just been brought into the hospital. He had a projecting tumor immediately over the region of the stomach covered only by clothing. On inquiry, I learned that he had been in a drunken brawl the night before, and on his way home had become involved in a fight with his companion, who stabbed him in the region of the stomach, and that he had fallen to the ground and had remained there until about 3 a. m., when he was found by passers-by who sent him to the hospital.



Hernia of entire stomach resulting from stab wounds.

On examination this tumor proved to be the stomach protruding through the wound. It was nearly perfectly round, dark red, and measured about 10 inches in diameter and was strangulated. A photograph was taken at once by artificial light, after which I had the patient etherized and the tumor elevated as much as possible and turned from one side to the other. The skin was painted with a 5 per cent. solution of iodin beneath the tumor to the edges of the wound, after which the tumor was thoroughly cleansed with saline solution. The lower edge of the stab wound was enlarged. I found that the tumor consisted simply of the entire stomach, and that the stab wound was 1½ inches long diagonally and just beneath the ensiform cartilage, the wound severing the rectus muscle on both sides of the median line. The stomach was gradually reduced into the abdomen, the wound was cleansed with iodin, and the wound layers were sutured, the wound being entirely closed.

The patient made an uneventful recovery with the exception of a stitch abscess which caused some delay in the healing of the wound. He was discharged about November 1, well.

The little white marks seen on the tumor are due to the movements of the tumor during respiratory movement while the photograph was being taken.

Code of Lighting for Industrial Plants.—*Public Health Reports*, Jan. 24, 1919, contains the report of the divisional committee on lighting, section on sanitation, committee on welfare work of the committee on labor, advisory commission, Council of National Defense. It includes a set of rules officially approved by the Illuminating Engineering Society which have been tried out for several years under working conditions in factories, mills and other work places, and which constitutes the basis of the Pennsylvania factory lighting code and that of New Jersey, which went into effect in both states during 1916. The effects of good light in factories are thus set forth in the reports: reduction of accidents; greater accuracy in workmanship; decreased spoilage of product; increased production for the same labor cost; less eye strain; better working and living conditions; greater contentment of the workmen; better order, cleanliness, and neatness in the plant; easier supervision of the men. The article is illustrated, and is an important contribution to the subject of proper light in industrial plants.

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SATURDAY, MARCH 29, 1919

THE SUPRARENAL STRUCTURES CONSIDERED FROM NEW POINTS OF VIEW

With the resumption of research activities in the various fields of medical science which were interrupted by the war, the present may be an appropriate time to discard some of the outgrown conceptions that have been handed down in traditional fashion from decade to decade. Acquired hypotheses are always liable to become inherited prejudices which may hamper the progress of science if they are not rigorously subjected now and then to severe critical examination. The current teachings regarding the function of the suprarenal bodies furnish an illustrative case. The brilliant discovery of epinephrin in the suprarenal medulla—a substance capable of affecting blood pressure most profoundly when it is introduced into the blood stream—soon led to the statement that the normal tone of the sympathetic nervous system, particularly as exemplified in its effect on blood pressure, is maintained by an internal secretion from the suprarenals. This conclusion seemed to be fortified by the unquestioned fact that removal of the suprarenal organs is incompatible with the continuance of life. There is an accumulation of experimental evidence, however, some of which has been referred to in the past in The Journal, to indicate conclusively that the normal blood pressure is independent of the suprarenal secretion. A competent reviewer recently concluded that it is indeed doubtful whether under normal conditions a sufficient amount of epinephrin is discharged into the blood of the vena cava to affect appreciably the tone of the blood vessels, and this conclusion seems all the more justified because of the fact that small quantities of epinephrin have a dilating rather than a constricting influence, at least on certain vessels.[1]

There has been a naturally following temptation on the part of clinical observers to ascribe conditions exhibiting high blood pressure, as in arteriosclerosis and certain types of nephritis, to an increase of epinephrin in the blood. The expression "suprarenalemia" has thus attained a limited vogue. The extensive investigations of Stewart and collaborators at the Western Reserve University School of Medicine in Cleveland have, however, tended to render unlikely the explanation of high pressure on the basis of a suprarenal factor. Thus another suprarenal hope has been frustrated. We have also referred in the past to the apparent collapse of the theories so vigorously championed by Cannon with respect to the dependence of reactions to fear and other emotional states on hypersecretion of epinephrin into the blood.[2] So long as it is unproved that the suprarenal secretion can be made to discharge in abnormal amounts through experimental means, it seems hasty to assume a suprarenalemia in conditions of disease or of physiologic emergency.

The negation of so much that has followed the finding of epinephrin, and the appreciation of its pharmacologic potency, need not bring discouragement regarding the discovery of functions for the indispensable suprarenal structures. It is not generally understood by physicians who learned their anatomy in years gone by that what is called the suprarenal body represents the anatomic association of two components, each of which is derived from a separate and independent system. The suprarenal proper, or "cortex," is part of the "cortical" or "interrenal" system. The medulla is simply an accumulation of chromophil cells of the same nature histologically, chemically and pharmacodynamically, as similar masses of cells in other parts of the body. There is no clear evidence that these two systems are functionally related.

At the present time it may be profitable to turn the preponderance of attention away from the medullary part of the suprarenals, on which interest has so long been centered, and to institute inquiries regarding the cortex of the structures. In fact, there is not a little evidence that it is the cortex and not the medulla that is essential to life. Wheeler and Vincent[3] rightly assert that the older extirpation experiments on mammals did not definitely determine the question as to which constituent of the suprarenal body is essential to life, or whether, indeed, it is to the suppression of the compound organ in its entirety that we must attribute death after extirpation. They have furnished instances in which animals have survived, without symptoms, the destruction of the whole or practically the whole of the suprarenal medulla.

Experimental and clinical evidence are combining to indicate that the suprarenal cortex is associated in its functions in some way with the development of the sexual organs. Vincent[4] has reviewed the indications that when cortical tumors occur in the female, an accentuation of male secondary sexual characteristics develops, and simultaneously a hypoplastic condition of the internal generative organs supervenes. Additional evidences as to a connection between the suprarenal cortex and the sexual organs is furnished by the enlargement of the cortex during breeding and pregnancy. Feeding young animals with suprarenal gland substance seems to stimulate the growth of the testes. The present seems to be an appropriate moment to shift, for a time at least, the direction of interest away from the older beliefs, and to attempt to make new discoveries from new angles of attention.

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[1] Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, 1918, p. 745. Compare also Austmann, K. J.; Halliday, C. W., and Vincent S.: On the Relations of the Adrenal Medulla to 1917.

[2] Newer Views of the Functions of the Adrenals, editorial, J. A. M. A. **63**: 322 (July 25) 1914.

[3] Wheeler, T. D., and Vincent, S.: The Question as to the Relative Importance to Life of Cortex and Medulla of the Adrenal Bodies. Tr. Royal Soc. Canada, **11**: 125, 1917.

[4] Vincent, S.: The Experimental and Clinical Evidence as to the Influence Exerted by the Adrenal Bodies upon the Genital System, Surg., Gynec. & Obst. **25**: *294* (Sept.) 1917.

CHILD WELFARE AND DISEASE UNDER WAR-TIME FOOD CONDITIONS IN CENTRAL EUROPE

Reports which are beginning to reach us from central Europe bring confirmation in new ways of the seriousness of the food situation that has confronted the belligerent nations there in the past two or three years. Although an unusually large incidence of epidemics may be interpreted as representing the consequence of widespread malnutrition which offers more ready entrance to the invasion of infections, such a conclusion is by no means the inevitable one. Thus, the outbreak of influenza in many parts of the world can scarcely be adduced as proof of the existence of inadequate food supplies where the malady occurs. But, on the other hand, whenever deficiency diseases come into unusual prominence it may be taken as almost axiomatic that food conditions are somehow disturbed. The accounts of the appearance of "war edema" have focused attention on dietary difficulties referable to war-time conditions. And more recently the descriptions of an unexpected prevalence of infantile scorbutus[1] accentuate the long suspected seriousness of the food situation in the defeated countries.

Even the European pediatricians have at length accepted the inclusion of infantile scurvy in the category of nutritive disorders of the deficiency type. The failure to identify Barlow's disease with what is termed scorbutus in this country appears to be accounted for in large degree by the comparative infrequency of well defined cases. Writing from von Pirquet's clinic for children in Vienna, Tobler remarks that scorbutus has heretofore played only an insignificant part in the pathology of childhood within the ages from 2 to 15. In Gerhardt's "Handbuch für Kinderheilkunde," published in 1878, scurvy in childhood was stated to have practically disappeared. Today, however, it is possible to find reports of literally hundreds of cases of the disease. It is not confined to unhygienic surroundings where "bad air," lack of sunlight, humidity and other once supposedly formidable dangers lurk. Even in the children's homes attached to the great universities of Europe, scorbutus has made its appearance. Underfeeding is not a prime factor, if, indeed, it is a contributory one. Tobler reports that out of sixteen children living at one time in the presumably excellent environment of the solarium of the children's clinic in Vienna, twelve developed scurvy. Hence he dismissed lack of care or unsalubrious climate as an etiologic factor, and refers the genesis of the disease to the protracted exclusive use of foods which have been subjected to certain chemical and physical processes incident to their preparation for the diet. We are told that in the winter of 1917-1918, fresh vegetables and potatoes were no longer available for the children. In one institution only 16 liters of milk were procurable for a personnel of about 500. In 200 carefully studied cases of scurvy, Tobler identified the incidence of the disease with the lack of foods which had not been altered in some way by heat. This corresponds with the numerous reports of the destruction of the antiscorbutic potency of natural foods by heat, as has been pointed out frequently of late in THE JOURNAL.[2]

Reports from Prague are also distressing.[3] The statistics of the average daily gains in weight of children of a certain group in one of the orphanages verify this. From 1913 to 1917 the figure, in grams per day, decreased thus each year: 20.6, 20.5, 17.2, 14.1 and 10.8. The mortality increased from 4 per cent. in 1913 to 15 per cent. in 1917. Various factors have contributed to this unfortunate outcome. Owing to the conditions for which the war was responsible, breast feeding was no longer possible to the same extent as formerly. The nursing women were nourished less well than in the times preceding the war. The failure to secure foster mothers was coincident with an enforced decrease in the supply of cow's milk. The quality of the latter has steadily decreased; and such useful by-products of the milk industry as buttermilk are not available at all.

It is not surprising if, under such trying circumstances, infantile scurvy has conspicuously joined the ranks of other diseases associated with nutrition. Epstein, of the children's clinic in Prague, has given an account of the difficulties confronting therapeutic efforts. The much desired "raw" milk was often of doubtful "rawness," as the high price of milk had taught dairymen to prevent by heat sterilization the loss of even the slightest portion. Oranges, long recommended by English and American pediatricians as antiscorbutics, disappeared from the markets early in the war. Other fruits and even most green vegetables were difficult to obtain and were usually so expensive as to make them almost prohibitive among certain groups of the population. Hence we can understand the earnest appeal of the pediatricians of the afflicted territories for the speedy renewal of the milk supply and their protest against the production of high-priced butter at the expense of infant welfare. In an almost frantic appeal for relief from the impending disaster to European childhood, Epstein has called for action instead of words on the part of the authorities responsible for the public health. We may do well to understand the true import of such warnings so that the nutritive welfare of our own child population shall never be knowingly neglected.

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[1] Tobler, W.: Das Skorbut im Kindesalter, Ztschr. f. Kinderh. 18: 63, 1918. Epstein, A.: Ueber eine auffällige Häufung der Barlow'schen Krankheit in den Kriegsjahren 1917-1918, Jahrb. f. Kinderh. 88: 237, 1918.

[2] Further Facts Regarding Antiscorbutics, editorial, J. A. M. A. 72: 728 (March 8) 1919.

[3] Pollak, L.: Ueber das Verhalten der Säuglinge in den Kriegsjahren, Wien. med. Wchnschr., No. 23, 1918.

ACUTE INFECTIOUS POLYNEURITIS—A NEW DISEASE

During the war there was observed among British troops a form of polyneuritis of a peculiar character which has been studied with noteworthy results by Bradford, Bashford and Wilson.[1] The clinical manifestations were studied by Bradford in thirty cases.[2] Usually there was first a mild general febrile illness before paralysis appeared, but occasionally paralysis was the first symptom observed. As the primary illness was mild, the symptoms being fever, headache, pain in the back, perhaps vomiting, and sometimes sore throat, no importance as a rule was ascribed to it; at times, however, the condition seemed serious enough to suggest perhaps the possibility of epidemic meningitis. Usually the patient appeared to recover fully in a few days, and then there ensued a variable period of latency, in one case as long as five weeks, before the paralysis which seems to be peculiar to the disease came on. During this interval some of the patients felt well enough for severe physical exertion without distress.

The main characteristics of the paralytic stage were sudden, widespread paralysis, especially, but not exclusively, of the large muscles of the proximal segments of the limbs and trunk; the face also was almost always involved, and generally on both sides; individual muscles or groups of muscles were not picked out, the limbs and trunk being affected as a whole. Though symmetrical, the palsy, which was progressive and sometimes distinctly ascending, was not always equal on the two sides. Atrophy and contractures did not develop. Usually the paralysis was accompanied with pain, numbness, tingling, and relative rather than absolute sensory loss. In declared cases there was loss of tendon reflexes; the sphincters were not profoundly involved. A striking feature was the rapidity with which urgent symptoms and even death came on in patients who seemed to be doing well. In this series of thirty cases death occurred in eight, sometimes rather suddenly, and in all except in one case before the eleventh day of the palsy. In the patients that recovered, the paralysis, first progressive, became stationary and then it would begin slowly to improve.

The results of the work by Bashford on the transmission of the disease to monkeys, and by Wilson on the virus, are remarkable indeed. The main features of the disease were reproduced in monkeys by the subdural injections of suspensions of the spinal cord of three cases after preservation in 50 per cent. glycerol for from twenty-five days to seven months; also by inoculation of cord material from monkey to monkey, and moreover by injection of pure cultures of an organism isolated from the central nervous system. The experimental disease developed after an incubation period of from five to six weeks, but without any recognized and definite preliminary febrile stage, the main symptoms being weakness and paralysis of the limbs, apparently tending to recovery. In anaerobic tissue cultures of nervous tissues from fatal cases and from monkeys, immersed in 50 per cent. glycerol for some days to rid them of gross bacterial contaminations, Wilson obtained growths of a minute, pleomorphic organism, which was difficult to stain and which died out after a few subcultures. Apparently the organism was widely distributed in the nervous system because it rarely happened that a culture failed to give specific growths. If confirmed by subsequent investigators, these results will be highly creditable because of the great difficulties and the many chances of error that attend practically every step in the cultural technic employed in this work.

As regards the gross and microscopic changes in the nervous system, suffice it to say that meningeal congestion, edema, and minute hemorrhages and apparent inequalities in the gray matter of either side of the cord were noted, and that the evidences of acute neuritis and of degeneration of nerve cells with more or less diffuse cellular infiltration in the central nervous system were so definite as to lead the authors to conclude that it concerned a diffuse affection of the nervous system involving the cord, the spinal ganglions and the peripheral nerves, with, however, "but slight incidence on the cortex." The lesions in the central nervous system seem to have been more diffuse than in epidemic poliomyelitis; intense focal changes in the anterior horns, like those seen in the latter disease, seem not to have been observed.

Whatever the final outcome of etiologic and anatomic investigations, there seems little doubt that the English observers have pointed out the existence of a hitherto practically unrecognized disease. The new disease differs from ordinary neuritis in many respects, notably the constant bilateral paralysis of the face, trunk, and proximal segments of the limbs, progressive and at times at least ascending, with involvement of the central nervous system. It would seem to be distinct from epidemic poliomyelitis because there is no muscular atrophy or tendency to contracture, and because the lesions are not identical. Bradford suggests that the virus of the new disease may be a member of the same class as that of epidemic poliomyelitis; possibly epidemic or lethargic encephalitis (nona) is caused by allied organisms. Here are many problems for future work. In the meantime, physicians should bear in mind the probability that there are distinct infectious diseases of the nervous system which may be escaping detection because of a general similarity in their clinical manifestations to established entities.

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[1] Bradford, J. R.; Bashford, E. E., and Wilson, J. A: Acute Infective Polyneuritis, Quart. Jour. Med. **12**: 88, 1919.

[2] Gordon Holmes (Brit. M. J. **2**: 37 [July 14] 1917) is said to have described similar cases.

Current Comment

HOSPITAL STANDARDIZATION

The first and most important function of a hospital is to care for the sick and the injured. Many hospitals, however, are engaged in the training of interns and nurses; some are closely related to medical education and some, through research, are adding largely to the world's knowledge in regard to the etiology, diagnosis and treatment of diseases. In recent years also many hospitals have taken on an additional function by having social service workers follow up the patients after they leave the hospital. Where formerly they were merely institutions to care for the sick persons who could not be cared for at their homes, hospitals have now become social institutions, with broadened functions and having a much more intimate relationship with the public in the communities which they serve. In recent years this relationship has increased the general interest in hospitals as public institutions and has pointed to the necessity and importance of their being investigated and regulated—which means standardized. In this connection, the article on hospital standardization by the president of the American Hospital Association, will be of particular interest.[1] In this paper Dr. Warner emphasizes the many and varied interests now centering in the hospital and the equally varied and numerous functions being performed by them. In any efforts toward standardization, therefore, all these interests and functions must be given careful consideration. Not the least factor in the conduct and efficiency of the hospital is the administration, and in this respect hospitals are not unlike hotels with their complex problems of management. In the standardization of hospitals also, the further improvement of both undergraduate and graduate medical education, as well as the function of training interns, and of course nurses also, must be kept in view. The number of hospitals, however, is increasing so rapidly that it will be impossible to supply more than a portion with interns. This brings to the hospital the additional function of training expert technicians and hospital assistants who can perform many of the duties now devolving on interns. The task of standardizing hospitals is a large one, and the many interests involved must work together to establish that standard which will make it possible for these institutions to render the greatest service to the people in the communities in which they are located.

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[1] Warner, A. R.: Hospital Standardization, this issue, p. 914.

THE END OF A LONG STRUGGLE IN SIGHT

The passage of the public health law in New Mexico, on which we commented last week,[1] marks the beginning of the end of a long campaign for uniform state legislation on vital statistics. Efforts to secure adequate vital statistics legislation were begun almost immediately after the organization of the American Medical Association in 1847. Yet in 1906 there was no birth registration worth mentioning, while only ten states had any death registration. In 1907, the so-called model bill was drafted, through the united efforts of the federal Bureau of the Census, the Committee on Legislation of the American Medical Association, and the Committee on Vital Statistics of the American Public Health Association. Numerous professional and social organizations endorsed the measure, and the work of securing its adoption in the different states was taken up systematically and carried on from year to year. Quietly but steadily this movement has gone on, with the result that the passage of the law in New Mexico leaves Arizona and Nevada as the only states without provisions for birth and death registration. Forty-one states have now adopted satisfactory laws. In Delaware, South Dakota, Iowa, West Virginia and Alabama, the laws are not satisfactory for several reasons, the chief difficulty arising from adherence to the obsolete and ineffective method of registering deaths through county clerks rather than through local registrars under the control of a state registrar. These inconsistencies will without doubt be corrected in the near future. In fact, bills are at present before the legislatures of Alabama and West Virginia for the reorganization of their vital statistics methods. The Arizona legislature meets in November of the present year, when it is hoped that the model bill will become a law. This would leave only Nevada to adopt the law at the next session of her legislature. If the physicians and the public spirited citizens of Arizona will interest themselves in this matter, there will be no difficulty in adding Arizona to the list of states enjoying modern and effective birth and death registration.

STANDARDIZATION OF DEGREES IN PUBLIC HEALTH

In our correspondence column this week appears a report regarding an effort to standardize degrees in public health. This is an important and timely subject not only in its relation to courses in public health but also in its bearing on degrees for other creditable graduate work. An individual who has creditably pursued a definite course of graduate instruction deserves to have a suitable degree. At the same time a multiplicity of degrees should be avoided. The report referred to suggests the degree of Doctor of Public Health (Dr.P.H.) for graduates in medicine after two years of work, of which at least one has been in residence. This is a wise suggestion which might well be adopted by all universities giving degrees in public health. Three years ago there were seven institutions which reported courses leading to the degree of Doctor of Public Health, and only three[1] required the two year course, while the others[2] required a one year course. One other institution, the University of California, granted the degree of Graduate in Public Health (Gr.P.H.) on completion of a two year course. To avoid confusion, one degree must be awarded for work of similar character; and to give the degree a real value, it must represent a definite amount of work. It is encouraging also to note that for a three year graduate course, for students holding the bachelor degree from a college or technical school, the report suggests either the degree of doctor of philosophy (Ph.D.) or of Doctor of Science (Sc.D.). The former degree is seldom granted as an honorary title while on the contrary the latter degree is honorary in the majority of instances. It would appear, therefore, that the doctor of philosophy (Ph.D.) degree is preferable. As to whether the character of the work done should be designated by such phrases as "in Public Health and Hygiene," there appear to be differences of opinion. So long as a degree used represents a definite amount of creditable graduate work, it would not seem necessary to add a lot of supernumerary letters to indicate the particular kind of work done.

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[1] Modern Health Organization in New Mexico, Current Comment, J. A. M. A. 72: 868 (March 22) 1919.

INCREASED HARRISON LAW TAX UNJUST TO PHYSICIANS

While the Harrison law for the control of narcotic drugs was passed ostensibly for the purpose of raising revenue, it is in reality a public health measure. The revenue feature is only a legal subterfuge, as it was only by imposing a tax that Congress could exercise any jurisdiction on the question. The tax, therefore, being merely a pretext, should be a minimum and purely nominal one. Originally, the law required physicians who desire to prescribe the drugs covered by the act to pay an annual registration fee of one dollar. There are approximately 150,000 physicians in the United States. The law, therefore, imposed a tax of $150,000 on the medical profession for the protection of the public. This tax physicians cheerfully paid, accepting this small burden for the sake of the public benefits to be derived from the measure. However, at the last session, Congress, in the revenue law, increased the fees for registration under the Harrison law. The license fee for physicians was increased to three dollars. This means that physicians in the United States will be required during the next year to contribute nearly half a million dollars, purely for the public good and not in any sense for the benefit of the profession. The Harrison law is of no special benefit to physicians. The Journal, the American Medical Association and the American medical profession enthusiastically supported the Harrison bill when it was before Congress. The great majority of the profession have cooperated to the extent of their ability to promote the enforcement of the law. The nominal tax of one dollar was accepted by physicians as necessary to validate the measure. But there is not the slightest excuse, either legal or social, for increasing this fee to three dollars. If the expenses of administering the law are greater than the revenue derived from it, sufficient appropriation should be made out of the public money derived from general taxation. The law is for the benefit of the public, and the public should pay for it. It is, of course, too late to secure any change in the situation for the present year, but the law should be amended at the first opportunity by restoring the nominal tax of one dollar. If our state and county societies will bring this situation to the attention of their congressmen and will demand the amendment of the present law, speedy correction of the injustice done the profession will be possible.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 21, the Medical Corps contained 20,243 officers, a decrease of 437 from the previous week. The Medical Reserve Corps contained 1,198 officers. The total number of medical officers discharged since the beginning of the war is 13,279.

Air Service Division of the Office of the Surgeon-General Discontinued

The Surgeon-General's Office announces that the Air Service Division of that office, which was established for the purpose of handling medical problems connected with the aviation service, has been discontinued. The business of that division will be taken over by the air service under the jurisdiction of its chief surgeon.

Officers Appointed in Medical Corps of Navy

One hundred and forty-eight temporary and reserve officers have been appointed in the regular Medical Corps of the Navy as a result of recent examinations. These officers have served during the war in a temporary capacity. Thirty-eight were temporary officers and the remainder members of the reserve corps.

Promotion in Army Medical Corps

The provisions of section 10 of the national defense act relative to promotions in the Army Medical Corps, suspended by the act of Oct. 6, 1917, were again made operative from December 10. All officers who had completed one year's service prior to December 10 have been promoted. However, since the suspension of the act of October 6, which removed for the period of the war the requirements that lieutenants in the Medical Corps shall serve five years before being entitled to a captaincy, no service except that rendered under a permanent commission counts toward promotion.

General Pershing Thanks the Medical Corps

Following is the copy of a letter dated Feb. 20, 1919, from the commander-in-chief of the American Expeditionary Forces to Col. Walter D. McCaw, M. C., chief surgeon, A. E. F.:

My dear Colonel McCaw:

Now that active operations are at an end, and many officers and enlisted personnel are preparing to sever their connection with the military forces and return to civil life, I desire to express my personal appreciation and thanks and that of your fellow members of the American Expeditionary Forces to you, and through you to the members of your Department, for the splendid services they have rendered.

At the front and in the long chain of hospitals extending down to the Base Ports, I have watched the fine and unselfish character of their work, and the achievements which have added new glory to the noble professions they have so ably represented. Many of them have shared with the line troops the hardships of campaign conditions and have sustained casualties and privations with fortitude that is beyond praise. No labor has been too exhausting and no danger too great to prevent their full discharge of duty.

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[1] These are the Schools of Public Health of the Universities of Colorado, Michigan and Wisconsin.

[2] These are the Schools of Public Health of Harvard, Tulane, University and Bellevue, and the University of Pennsylvania.

A special word of thanks is due to those members who were attached to and served continuously with the armies of our Allies. Their efficiency and high ideals have called for the highest praise of the Allied Governments under whom they have served.

Before they leave France, will you convey to all ranks under your command the deep sense of my personal appreciation of their splendid services and my regret at the impracticability of sending each and every one of them a letter of thanks?

Sincerely yours,
John J. Pershing.

Wax Models of War Wounds

An important work now being carried on by the Medical Department of the Army is the preparation of various lesions of the skin in wax showing the nature of wounds and diseases during the late war. Wax reproductions are being made in the Army Medical Museum by an expert of the following types of cases: chronic or unhealed ulcers following various types of wounds; unhealed lesions resulting from gas burns; unusual scar formations, and unusual skin diseases. It is the intention of the Medical Department of the Army to order patients in especially interesting cases of this character to the Walter Reed Hospital for further treatment and for the production of the models, which will be a permanent exhibit in the Army Medical Museum.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—Edmondson, J. H. (C.)
Marion—Swann, E. (C.)
Mobile—Inge, F. M. (C.)
Muscle Shoals — Lister, R. H. (L.)

ARIZONA

Bisbee—Richstein, E. J. (C.)

ARKANSAS

Hot Springs—Wilkins, J. S. (C.)
Texarkana—Read, W. K. (M.)

CALIFORNIA

Martinez—Fitzpatrick, E. B. (L.)
San Francisco—Allen, F. E. (M.)
Bunnell, S. (C.)

COLORADO

Colorado Springs—Brown, L. G. (L.)
Denver—Collins, E. W. (C.)

CONNECTICUT

Hartford—Jarvis, H. G. (L.)
Litchfield—Turkington, C. H. (C.)
Waterbury—Bevans, T. F. (C.)

DELAWARE

Wilmington—Draper, J. A. (C.)

GEORGIA

Ashburn—Harris, H. W. (C.)
Patterson—Davis, C. L. (L.)

ILLINOIS

Atlanta—Brock, G. W. (C.)
Bloomington—Gailey, W. W., Jr. (C.)
Champaign—Davis, C. S. (C.)
Chicago—Davies, R. H. (M.)
Goodkind, M. L. (M.)
Hurwitz, E. (L.)
Maclay, O. H. (C.)
Myers, J. (C.)
Newell, W. B. M. B. (L.)
Pitte, C. E. (L.)
Stearns, R. W. (L.)
Garden Prairie—Hartman, M. L. (L.)
Oak Park—Phelps, L. B. (C.)
Peoria—Caldwell, C. B. (C.)
Waukegan—Connell, J. A. (L.)

INDIANA

Fort Wayne—Hamilton, A. (M.)
Rensselaer—Washburn, I. M. (C.)
West Baden—Boyd, C. E. (L.)

IOWA

Cedar Rapids—Skinner, G. C. (C.)
Hawarden—McAllister, F. J. (M.)
Independence — Agnes, F. F. (C.)
Manilla—Draper, W. E. (M.)
Mason City—Dakin, C. E. (L.)

KANSAS

Arkansas City—Hahn, M. (M.)
Salina—Riddell, J. D. (M.)

KENTUCKY

Fordsville—Deweese, C. (M.)
Louisville—Beck, C. K. (L.)
Sunrise—Beckett, G. A. (L.)
Winchester—Doyle, G. F. (C.)

MAINE

Buckfield—Atwood, H. F. (L.)

MARYLAND

Baltimore—Cohen, L. (C.)

MASSACHUSETTS

Boston—Arnold, H. D. (L. C.)
Lawrence, C. H., Jr. (L.)
MacAusland, A. R. (C.)
Rockwell, L. H. (L.)
Cambridge—Lee, R. I. (L. C.)
Foxboro—Bunnell, G. L. (L.)
Lowell—Collins, W. M. (L.)
Nantucket—Lewis, F. E. (C.)
Worcester—Bigelow, E. B. (M.)

MICHIGAN

Algonac—Bostwick, W. E. (C.)
Boyne Falls—Conkle, G. C. (L.)
Detroit—Babcock, W. L. (Col.)
Shurly, B. R. (L. C.)
Grand Rapids—Wilson, W. E. (C.)
Iron Mountain—Anderson, W. J. (C.)
Northville—Henry, T. B. (M.)
Shaftsburgh — Dunham, W. H. (C.)

MINNESOTA

Balaton—Germo, C. (L.)
Minneapolis — Jones, R. N., Jr. (L.)
Morrison—Zimmerman, H. B. (C.)

MISSOURI

Charleston—Shelby, M. H. (L.)
Kansas City—McAlester, A. W., Jr. (M.)
[illegible], T. S. (L.)
[illegible], L. (M.)
[illegible], C. (L.)
[illegible], W. (L.)
[illegible]
Herchenroeder, L. C. (C.)

MONTANA

Great Falls — Woodward, F. A. (L.)

NEBRASKA

Nelson—Lemoine, A. N. B. (L.)

NEW JERSEY

Barnegat—Bunnell, F. N. (L.)
Jersey City—Rector, J. M. (M.)
Montclair—Ewing, H. M. (C.)
Newark—Fewsmith, J. L. (C.)

NEW YORK

Avon—Swan, C. G. (L.)
Brooklyn—Agris, H. (L.)
Knoll, L. F. (L.)
Miller, S. (C.)
Canandaigua — Burgess, H. C. (L.)
New York—Barclay, H. (L. C.)
Bookman, M. R. (L.)
Boyd, C. S. (L.)
Hammond, G. M. (M.)
James, H. (M.)
Jean, G. W. (M.)
Johnson, F. A. (C.)
Ladinski, L. J. (M.)
Rockwell, W. H. (M.)
Sager, M. A. (L.)
Williams, F. E. (M.)
Pleasantville—Wilcox, E. N. (C.)
Rushford—Hardy, H. K. (L.)
Saratoga Springs—Ledlie, J. B. (C)
Syracuse—Lawless, A. T. (L.)

NORTH CAROLINA

Durham—Bitting, N. D. (C.)
Winston-Salem—Wyatt, W. (C.)

NORTH DAKOTA

Linton—Hogue, R. R. (C.)

OHIO

Cincinnati—Palmer, D. W. (C.)
Cleveland—Ingersoll, J. M. (M.)
Colton—Garwood, G. E. (C.)
Columbus—Fisher, H. H. (C.)
Williamstown—Tombaugh, A. A. (L.)

OKLAHOMA

El Reno—Catto, W. B. (L.)
Shawnee—Gallaher, W. M. (L.)

OREGON

Portland—Joyce, T. M. (M.)
MacKenzie, K. A. J. (C.)
Matson, R. W. (M.)
Petheram, C. G. (L.)

PENNSYLVANIA

Ashley—Frederick, D. F. (L.)
Chester—Campbell, E. A. (C.)
Rozploch, A. R. (L.)
Erie—Schlindwein, G. W. (C.)
Mercer—Richardson, W. W. (M.)
Philadelphia—Bernd, L. H. (M.)
Cooper, H. (C.)
Pittsburgh—Behan, R. J. (C.)
Davison, R. E. (M.)
Robinson, J. W. (C.)
Reading—Kistler, C. K. (L.)
Krick, G. W., Jr. (L.)
Roaring Springs — Hair, W. L. (L.)

SOUTH CAROLINA

Clarks Hill—Sharpton, B. T. (L.)
Rock Hill—Rakestraw, C. M. (C.)

TENNESSEE

Gallatin—Reese, H. (M.)
Kingsoprt—Edwards, C. P. (C.)
Memphis—Anderson, E. L. (L.)
Thompson, E. G. (C.)

TEXAS

Antelope—Hilburn, R. E. (L.)
El Paso—Grace, T. W. (L.)
Irvin, E. H. (C.)
San Antonio — Hargis, W. H. (M.)
Waco—Colgin, E. E. (L.)
Curran, W. F. (C.)

UTAH

Smithfield—Merrill, R. T. (M.)

VIRGINIA

National Soldiers Home—Jenkins, F. E. (M.)
Richmond—Weitzel, J. S. (L.)

WEST VIRGINIA

Sandfork—Corkrean, J. E. (L.)

WISCONSIN

Milwaukee—Merten, P. J. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Crockett—Adams, J. H.
Los Angeles—Bowers, C. H.
Cowan, J. R.
Hutchinson, W. W.
Schwartz, J. L.
Patton—Parkin, V.
San Francisco—Harrison, W. H.
Leland, T. B. W.
Tupper, R. B.
Vallejo—Hare, W. B.

CONNECTICUT

New Haven—Coffey, J. R.

GEORGIA

Richland—Pickett, C. E.

ILLINOIS

Chicago—Brook, O.
Hillis, D. S.
Granville—Dysart, B. Q.
Park Ridge—Conley, T. E.

INDIANA

Gary—Ryan, L. K.

MASSACHUSETTS

Boston—Bailey, F. J.
Coffin, R. A.
New Bedford—Foster, E. E.
West Springfield—Corcoran, G. B.

MICHIGAN

Detroit—Drolshagen, E. A.
Ferris, R. G.

MINNESOTA

Minneapolis—Hall, W. W.
Kistler, A. J.

MISSOURI

Kansas City—Goodman, S.
Hall, E. P.
Holbrook, R. W.
Skinner, J. O.
St. Louis—Deppe, A. H.

NEW JERSEY

Montclair—Richardson, A. H.

NEW YORK

Brooklyn—Stattman, B.
New York—Kerley, J. H.
Vorhaus, M. G.

NORTH CAROLINA

Rocky Mount—Willis, B. C.

OHIO

Toledo—Daniells, R. P.

OKLAHOMA

Vinita—Johnson, H. L.

PENNSYLVANIA

Erie—Strimple, J. T.
Philadelphia—Knox, H. E.
Staub, J. S.
Thomas, B. A.

RHODE ISLAND

Providence—English, J. M. F.

TEXAS

Austin—Gilbert, G. H.
Granger—McLaughlin, R. L.
Shelbyville—Windham, L. B.

VIRGINIA

Centralia—Ragland, J. F.
Portsmouth—Nolan, F. F.
Richmond—Johns, F. S.
Salem—Darden, J. C.

WASHINGTON

Seattle—Hopkins, R. T.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Lee, Va., from Camp Dix, Lieut. J. G. SANDERS, Troy.

To Camp Pike, Ark., as commanding officer of the base hospital, from Camp Sheridan, Col. L. A. FULLER.

To Camp Travis, Texas, base hospital, from Camp Hancock, Capt. W. G. THIGPEN, Montgomery.

Arizona

To Fort Sheridan, Ill., from Denver, Capt. E. J. RICHSTEIN, Bisbee.

Arkansas

To Camp Pike, Ark., base hospital, from Camp McClellan, Lieut. W. K. GRAY, Little Rock; from Whipple Barracks, Capt. I. H. JEWELL, Paris.

To Denver, Colo., from Camp Pike, Capt. W. D. JUDKINS, Little Rock.

To Hoboken, N. J., from Camp Dix, Major B. V. POWELL, Camden.

To report to the commanding general, Southeastern Department, from Camp Joseph E. Johnston, Capt. E. E. POYNER, Green Forest.

California

To Fort Bayard, N. M., from Camp Fremont, Capt. A. B. McCONNELL, Fresno.

To Fort Douglas, Utah, from Camp Dix, Major A. D. S. McCOY, Pasadena; from Camp Fremont, Capt. T. M. CARTMELL, Los Angeles.

To Garden City, N. Y., from Washington, D. C., Lieut.-Col. H. W. HORN, San Francisco.

To San Francisco, Calif., from Camp Dix, Lieut.-Col. E. S. KILGORE, San Francisco. Letterman General Hospital, from Camp Fremont, Capts. L. P. ADAMS, T. REA, Oakland; Lieuts. J. L. MUDD, Merced; H. D. BARNARD, Sacramento; from Fort Riley, Lieut. R. L. CRUM, Los Angeles.

To Washington, D. C., from Newport News, Lieut.-Col. H. W. HORN, San Francisco.

Canal Zone

To Garden City, N. Y., from Camp Upton, Major E. P. BEVERLY, Balboa.

Colorado

To Biltmore, N. C., from Camp Grant, Capt. W. A. SEDWICK, Denver.

To Denver, Colo., from Cooperstown, N. Y., Lieut. J. B. SALBERG, Boulder.

The following orders have been revoked: *To Denver, Colo.*, from Camp Cody, Lieut. T. A. DAVIS, Portland. *To Washington, D. C.*, Surgeon-General's Office, from Hoboken, Major W. W. WILLIAMS, Denver.

Connecticut

To Chicago, Ill., Chicago University, for instruction, from New Haven, Major C. B. WOOD.

To Fort Oglethorpe, from Camp Meade, Lieut. H. E. STEWART, New Haven.

To Garden City, N. Y., from Vancouver Barracks, Major R. BLACKMORE, Hartford.

To Houston, Texas, Ellington Field, as flight surgeon, from Dallas, Capt. A. E. BRIDES, New Haven.

To Oteen, N. C., from Camp Hancock, Capt. C. O. PURINTON, West Hartford.

The following orders have been revoked: *To Camp Meade, Md.*, from Camp Polk, Lieut. E. K. DEVITT, Lyme. *To Fort Oglethorpe* for instruction, Lieut. E. J. S. SCOFIELD, Danbury.

Delaware

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from New Haven, Capt. M. I. SAMUEL, Wilmington.

District of Columbia

To Newport News, Va., from Washington, D. C., Lieut.-Col. H. B. McINTYRE.

To Panama Canal Department, from Washington, D. C., Col. L. T. HESS.

To report to the commanding general, Eastern Department, from Camp A. A. Humphreys, Capt. H. W. BARKER, Washington.

To Walter Reed General Hospital, D. C., from Camp A. A. Humphreys, Capt. R. H. FORD, Washington; from Camp Hancock, Major W. R. BUCHANAN, Washington.

To Washington, D. C., Surgeon-General's Office, from Walter Reed General Hospital, Col. E. R. SCHREINER.

Florida

To Fort Reno, Okla., from Camp Sheridan, Capt. R. B. MacFEETERS, Jacksonville.

To Hoboken, N. J., from Camp Jackson, Capt. G. DAY, Jacksonville.

To Pittsburgh, Pa., from Camp Sheridan, Capt. M. E. HECK, St. Augustine.

To report to the commanding general, Southeastern Department, from Camp Joseph E. Johnston, Capt. J. M. IRWIN, Crystal River.

Georgia

To Camp Jackson, S. C., from Camp Wheeler, Major O. H. STANLEY.

To Camp Lee, Va., base hospital, from Walter Reed General Hospital, Capt. W. C. PUMPELLY, Macon.

To Camp Zachary Taylor, Ky., base hospital, from West Baden, Capt. T. H. STEWART, Atlanta.

To Fort McHenry, Md., from Camp Dix, Capt. J. C. McDOUGALL, Atlanta.

To Fort McPherson, Ga., from Camp Beauregard, Lieut. T. STARR, Calhoun.

To Fort Oglethorpe, from Southern Department, Capt. G. B. SMITH, Rome.

To Roland Park, Md., from Camp Logan, Lieut. C. L. EDGE, Columbus.

Illinois

To Camp Kelly, Texas, as flight surgeon, from Houston, Capt. H. E. MIZE, Chicago.

To Camp Lewis, Wash., from Eastview, Major R. M. RITCHEY, Elgin.

To Camp Pike, Ark., from Camp Sheridan, Lieut. G. C. CONLIN, Springfield.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Capt. J. R. HARRY, Chicago.

To Camp Travis, Texas, from Camp Hancock, Lieut. J. M. McSPARIN, Stonefort; from Camp Logan, Capt. E. A. AISENSTADT, Chicago. Base hospital; from Camp Sheridan, Capt. D. N. EISENDRATH, Chicago.

To Fort Benjamin Harrison, from Camp Grant, Lieut.-Col. G. B. LAKE.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Camp Lewis, Lieut. V. MAURICAU, Rockton.

To Fort McPherson, Ga., from Camp Logan, Lieut. D. D. CAMPBELL, Chicago.

To Fort Oglethorpe, from Camp Grant, Lieut. E. R. EASTON.

To Fort Sheridan, Ill., from Camp Dix, Major C. J. POOLE, Mount Vernon; Capt. R. M. KELLY, Chicago; from Camp Dodge, Major H. A. POTTS, Chicago; from Camp Zachary Taylor, Lieut. M. SOLOMON, Chicago.

To Williamsbridge, N. Y., from Camp Dix, Capt. G. C. TALLERDAY, Jr., Chicago.

The following orders have been revoked: *To Chicago, Ill.*, from Long Beach, Lieut. A. M. MUELLER, Rock Island. *To Fort Riley* for instruction, Lieuts. G. C. BUNTIN, Benton; C. A. DONOVAN, Chicago; C. HENDERSON, Clay City; C. W. MILLIGAN, Springfield. *To Washington, D. C.*, from Camp Grant, Lieut.-Col. H. C. MICHIE.

Indiana

To Camp Abraham Eustis, Va., base hospital, from Camp McClellan, Capt. W. W. ROSS, La Porte.

To Camp Grant, Ill., base hospital, from Colonia, Capt. J. A. CRAIG, Gary.

To Camp Zachary Taylor, Ky., from Camp Sheridan, Capt. L. H. REDMAN, Elizabethtown.

To Detroit, Mich., from Camp Custer, Capt. R. L. SENSENICH, South Bend.

To Fort McHenry, Md., from Camp Sheridan, Capt. H. L. MILLER, West Baden.

To Fort Ontario, N. Y., from Camp Hancock, Lieut. A. L. OILAR, Russiaville; from Danville, Lieut. E. K. HOLT, Logansport; from Long Beach, Lieut. H. G. HAMER, Indianapolis.

Iowa

To Camp Bowie, Texas, base hospital, from Camp Beauregard, Lieut. L. A. NELSON, Iowa City.

To Camp Dodge, Iowa, base hospital, from Camp Pike, Capt. J. A. HULL, Ottumwa.

To Fort Des Moines, Iowa, from Camp Grant, Lieut. P. M. DAY, Jr., Keokuk.

To Jefferson Barracks, Mo., from Camp A. A. Humphreys, Lieut. E. W. SPROULE, Peterson.

To Rantoul, Ill., Chanute Field, from Everman, Lieut. J. T. McBRIDE, Des Moines.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major E. A. MERRITT, Council Bluffs.

Kansas

To Camp Bowie, Texas, base hospital, from Fort Logan H. Roots, Lieut. F. G. POUTRE, Horton.

To Camp Lee, Va., base hospital, from Camp Beauregard, Capt. R. R. NEVITT, Mildred.

To Jefferson Barracks, Mo., from Camp Beauregard, Capt. F. C. CAVE, Winfield.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. B. ANDERSON, Victoria.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. J. L. PHYTHIAN, Newport; from Camp Pike, Lieut. A. H. FALCONER, Louisville.

To Fort McHenry, Md., from Fort McPherson, Lieut. T. R. COLLIER, Louisville.

To Fort Snelling, Minn., from Camp Dix, Major J. W. PRICE, Jr., Louisville.

To Fort Totten, N. Y., from Camp Dix, Capt. R. A. IRVIN, Clay City.

To Jefferson Barracks, Mo., from Camp Sheridan, Lieut. J. T. MALONE, Jr., Louisville.

Louisiana

To Fort McPherson, Ga., from Markleton, Capt. E. L. LECKERT, New Orleans.

Maine

To Camp Devens, Mass., base hospital, from Army Medical School, Lieut. W. E. CLARKE, Damariscotta Mills.

To New Haven, Conn., from Markleton, Capt. C. B. SYLVESTER, Harrison.

Maryland

To Camp Dix, N. J., to examine the command for nervous and mental diseases, from Camp McClellan, Lieut. F. N. OGDEN, Baltimore.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp A. A. Humphreys, Lieut. C. V. McMEEN, Baltimore.

To Governors Island, N. Y., from Camp Gordon, Lieut. G. H. PRESTON, Baltimore.

Massachusetts

To Camp Shelby, Miss., to examine the command for nervous and mental diseases, from Camp Sheridan, Lieut. C. B. PARTINGTON, Framingham.

To Camp Upton, N. Y., base hospital, from Camp Dix, Major F. H. LAHEY, Boston; from Camp Hancock, Capt. F. W. GAY, Malden.

To Colonia, N. J., from Army Medical School, Lieut. A. KLEIN, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. FOX, Taunton.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. J. E. GOLDTHWAIT, Boston.

The following order has been revoked: *To East Norfolk, Mass.*, from Camp Dix, Capt. R. A. HATCH, Boston.

Michigan

To Camp Custer, Mich., base hospital, from Colonia, Lieut. W. M. BURLING, East Grand Rapids; from Walter Reed General Hospital, Capt. W. V. PYLE, Detroit.

To Camp Grant, Ill., base hospital, from Camp Hancock, Lieut. G. H. YEO, Big Rapids.

To Camp Upton, N. Y., base hospital, from Camp Wadsworth, Lieut. A. T. MAYS, Calumet.

To Camp Zachary Taylor, Ky., base hospital, from Camp Hancock, Capt. F. T. F. STEPHENSON, Detroit.

To report to the commanding general, Central Department, from Detroit, Lieut. C. W. SELLERS, Detroit. Eastern Department, from Camp Dix, Lieut. L. E. SEVEY, Grand Rapids. Southeastern Department, from Camp Dix, Lieut. C. W. DEAVER, Grand Rapids. Western Department, from Camp Dix, Lieut. S. M. WELLS, Jr., Grand Rapids.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* for instruction, and on completion *to his proper station*, from Cape May, Lieut. C. S. KENNEDY, Detroit; from Pittsburgh, Lieut. W. D. BARRETT, Detroit.

Minnesota

To Camp Grant, Ill., base hospital, from Camp Custer, Lieut. C. A. BOREEN, Minneapolis.

To Fort Leavenworth, Kan., from Fort Benjamin Harrison, Lieut.-Col. E. A. KING, Minneapolis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* and on completion *to his proper station,* from Chicago, Lieut. J. M. ARNSON, St. Paul.

To San Diego, Calif., Rockwell Field, from Riverside, Lieut. R. A. JOHNSON, Minneapolis.

The following order has been revoked: *To Chicago, Ill.,* from Camp Sevier, Capt. C. W. PAULSON, Minneapolis.

Missouri

To Army Medical School for instruction, and on completion *to Fort Riley,* base hospital, from Camp Dix, Capt. F. D. DICKSON, Kansas City.

To Camp Upton, N. Y., as camp sanitary inspector, from Camp Hancock, Capt. W. J. LYNN, Kansas City.

To Carlisle, Pa., from Lawrenceville, Lieut. K. C. PEACOCK, St. Louis.

To Fort Sheridan, Ill., from West Baden, Capt. J. M. BRADLEY, St. Louis.

To Fort Snelling, Minn., from Corpus Christi, Lieut. V. S. DANFERFIELD, Suray.

To report to the commanding general. Central Department, from Plattsburg Barracks, Lieut. E. F. HARRISON, Kennett.

Montana

To Boston, Mass., from Camp Sevier, Lieut. C. W. DAWE, Great Falls.

To Camp Pike, Ark., base hospital, from Corpus Christi, Lieut. W. D. MADDEN, Great Falls.

Nebraska

To Walter Reed General Hospital, D. C., from Camp Dix, Capt. C. T. UREN, Omaha.

New Hampshire

To Camp Dix, N. J., base hospital, from Camp Hancock, Capt. L. H. COGSWELL, Warner.

To Denver, Colo., from Markleton, Capt. J. C. THOMPSON, North Stratford.

To Fort Hancock, N. J., from Penniman, Capt. W. P. CRAIG, Walpole.

To Fort Ontario, N. Y., from Dansville, Capt. H. W. CLEASBY, Lancaster.

To Newport News, Va., from Pig Point, Capt. W. A. ALLEN, Hampstead.

To Rockefeller Institute for instruction, and on completion to Lakewood, N. J., from Army Medical School, Lieut. A. F. SARGENT, Pittsfield.

New Jersey

To Lakewood, N. J., from Camp Dix, Capt. R. D. SCHIMMELPFENNIG, Montclair.

To Newport News, Va., from Camp Dix, Lieut. L. C. GARCIA; from Walter Reed General Hospital, Lieut. J. P. SCHUREMAN, New Brunswick.

To Otisville, N. Y., from Camp Gordon, Lieut. C. ENGLANDER, Cedar Grove.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. H. R. DUKES, Kearny.

To South Baltimore, Md., from Lawrenceville, Capt. C. BROWNE, Princeton.

To Walter Reed General Hospital, D. C., from Hoboken, Col. J. D. GLENNAN.

New Mexico

To Camp Wadsworth, S. C., from Camp Hancock, Capt. S. H. ECKLES, Silver City.

To Fort Logan, Colo., from Camp Dix, Lieut. D. ALLISON, Gallup.

To Hoboken, N. J., from Camp Cody, Lieut.-Col. A. O. DAVIS.

To Mineola, N. Y., from Camp Dix, Capt. G. D. CARTER, Mesilla Park.

New York

To Army Medical School, from Camp Gum Springs, Lieut. F. HECKEL, New York. For instruction, from Camp Dix, Lieut.-Col. A. H. CILLEY, New York.

To Camp Devens, Mass., base hospital, from Carlisle, Lieut. J. A. HYAMS, New York.

To Camp Dix, N. J., from Camp Logan, Lieut. L. MARCUS, Brooklyn. Base hospital, from Fort McPherson, Capt. R. L. WOOD, Brooklyn.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp Hancock, Lieut. C. E. TUBB, Poughkeepsie.

To Fort D. A. Russell, Wyo., to examine the command for cardiovascular diseases, from Camp Shelby, Lieut. L. T. MANN, New York.

To Fort Des Moines, Iowa, from Camp Grant, Lieut. L. HAUSMAN, New York.

To Fort H. G. Wright, N. Y., from Camp A. A. Humphreys, Lieut. W. C. THOMPSON, Plattsburgh.

To Fort McHenry, Md., from Camp Dix, Capt. F. M. O'GORMAN, Buffalo.

To Fort Ontario, N. Y., from Army Medical School, Lieut. J. B. L'EPISCOPO, Brooklyn; from Camp Wadsworth, Lieut. J. J. LEARY, Utica; from Danville, Major D. L. ROSS, White Plains.

To Fox Hills, Staten Island, N. Y., from Camp Hancock, Capt. H. D. FURNISS, New York; from New Haven, Lieut. W. M. O'CONNELL, New York; from Oteen, Capt. L. H. FINCH, Amsterdam.

To St. Louis, Mo., from Camp Hancock, Lieut. J. W. WURTHMANN, New York.

To Walter Reed General Hospital, D. C., from Philadelphia, Lieut. D. D. KRUPP, Brooklyn.

To Washington, D. C., from Hoboken, Major H. D. COLLINS, New *York; from Williamsbridge, Lieut.-Col.* W. L. SHEEP. On completion *to Camp Grant, Ill.,* as camp surgeon, from Williamsbridge, Col. P. C. FIELD.

To Williamsbridge, N. Y., from Camp Lee, Lieut. S. WEISS, Brooklyn.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. F. S. WINSLOW, Rochester.

North Carolina

To Camp Sherman, Ohio, base hospital, from West Baden, Lieut. W. MONCURE, Jr., Hamlet.

To Mineola, N. Y., from Camp Meade, Capt. J. B. POWERS, Wake Forest.

To report to the commanding general, Northeastern Department, from Biltmore, Capt. T. A. MANN, Fairfield.

Ohio

To Army Medical School for instruction, from Camp Abraham Eustis, Lieut. N. J. SEYBOLD, Toledo.

To Camp A. A. Humphreys, Va., camp hospital, from Camp Hancock, Capt. J. GRIM, Akron.

To Camp Dix, N. J., from Camp Sheridan, Capt. W. A. DEERHAKE, St. Marys.

To Camp Holabird, Md., from Camp Sheridan, Lieut C. R. KITSMILLER, Fresno.

To Camp Upton, N. Y., base hospital, from Camp McClellan, Lieut. R. S. DINSMORE, Cleveland.

To Fort McHenry, Md., from Camp McClellan, Lieut. H. A. BAUGHN, Washington.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. E. W. HILL, Jr., Marietta.

To Fort Ontario, N. Y., from Danville, Lieut. G. A. ROWLAND, Columbus.

The following orders have been revoked: *To Camp Grant, Ill.,* base hospital, from Camp Cody, Capt. W. F. MILLHON, Columbus. *To Fort Benjamin Harrison,* Lieut. C. C. TAYLOR, East Rochester. *To Fort McPherson, Ga.,* from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Camp Jackson, S. C., base hospital, from Biltmore, Capt. R. E. RUNKLE, El Reno.

To Fort Sill, Okla., base hospital, from Camp Sheridan, Major F. H. CLARK, El Reno.

To Hoboken, N. J., from Camp A. A. Humphreys, Capt. J. M. COOPER, Oklahoma City.

The following orders have been revoked: *To Fort Des Moines, Iowa,* from Camp Travis, Lieut. R. M. HARGROVE, Norman. To Fort Riley for instruction, Lieut. F. A. MILLER, Gowen.

Oregon

To San Francisco, Calif., Letterman General Hospital, from Fort McDowell, Capt. W. C. MUNLY, Portland; from Washington, D. C., Major H. E. CLAY, Salem.

Pennsylvania

To Camp Meade, Md., base hospital, from Camp Dix, Capt. W. O. MARKELL, Wilkinsburg.

To Camp Wadsworth, S. C., from Camp Wheeler, Lieut.-Col. J. H. STEARNS, Delaware Water Gap.

To Carlisle, Pa., from Camp Dix, Lieut. S. A. NORRIS, Homestead.

To Denver, Colo., from Camp Jackson, Capt. C. R. BOWEN, Philadelphia.

To Fort D. A. Russell, Wyo., to examine the command for nervous and mental diseases, from Camp Beauregard, Lieut. W. C. MILLER, Warren.

To Fort Des Moines, Iowa, from Army Medical School, Capt. C. E. LLEWELLYN, Philadelphia.

To Fort McHenry, Md., from Camp Beauregard, Lieut. N. A. TIMMONS, South Bethlehem.

To Mineola, N. Y., from Camp Dix, Major J. P. GALLAGHER, Philadelphia.

To Oteen, N. C., from Camp Hancock, Capt. T. L. COLEY, Bethayres.

To Philadelphia, Pa., from Camp Jackson, Capt. T. C. DAVIS, Philadelphia.

To Pittsburgh, Pa., from Camp Dix, Lieut. S. C. SIMPSON, Pittsburgh.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. M. W. MYERS, Williamsport.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* for instruction, and on completion *to his proper station,* from Camp Custer, Capt. H. R. DECKER, Pittsburgh.

To St. Louis, Mo., from Camp Hancock, Capt. W. C. MAXWELL, Lieut. L. H. STUART, Pittsburgh.

To Washington, D. C., from Camp Dix, Major T. M. BAIRD, Wilkes-Barre; from Newport News, Major R. S. McCOMBS, Philadelphia.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Capt. R. A. THOMPSON, Butler; Lieuts. J. R. BARTLETT, Bellefonte; J. C. ATWELL, Butler. *To Fort Sheridan, Ill.,* from Hoboken, Lieut. G. A. PARKER, South Bethlehem.

Porto Rico

To report to the commanding general, Eastern Department, from Chicago, Capt. A. G. MEHRHOF, Central Aquierre.

Rhode Island

To Camp Zachary Taylor, Ky., base hospital, frwom Camp Logan, Capt. B. S. WILCOX, Providence.

To East Norfolk, Mass., from Camp McClellan, Capt. W. H. DYER, Providence.

South Dakota

To Camp Grant, Ill., base hospital, from New Haven, Capt. J. G. CHICHESTER, Redfield.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* for instruction, and on completion *to his proper station,* from Camp Grant, Capt. F. E. CLOUGH, Lead.

Tennessee

To Denver, Colo., from Markleton, Capt. R. PILLOW, Jr., Columbia.

To Newport News, Va., from Camp Hancock, Lieut. A. L. ERWIN, Nashville.

To St. Louis, Mo., from Fort Logan H. Roots, Lieut. O. P. WALKER, Memphis.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. A. G. BENTLEY, Quito. *To Fort Omaha, Neb.,* Lieut. B. POWELL, Albia.

Texas

To Camp Bowie, Texas, base hospital, from Camp Travis, Capts. I. J. MORRIS, Dallas; H. M. BUSH, San Antonio; Lieut. T. C. BREWER, Dallas.

To Camp MacArthur, Texas, as camp surgeon, from Corpus Christi, Major H. B. McMURDO.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* for instruction, and on completion *to his proper station,* from Camp Gordon, Lieut. J. S. TOMKIES, Dallas.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Major W. H. HARGIS, San Antonio.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. J. E. ADKISSON, Merkel.

Vermont

To Camp Abraham Eustis, Va., from Camp Hancock, Capt. E. J. MELVILLE, St. Albans.

To Camp Pike, Ark., base hospital, from Camp Sheridan, Lieut. J. D. THOMAS, Pownal.

To Hoboken, N. J., from Camp Sevier, Capt. W. J. WHITE, Shelburne.

To St. Louis, Mo., from Camp Hancock, Lieut. C. A. LOFTIS, St. Albans; from Camp Zachary Taylor, Capt. R. B. THOMAS, Enosburg Falls.

Virginia

To Hoboken, N. J., from Camp Pike, Capt. L. N. HARRIS, Harrisonburg.

To Newport News, Va., from Hoboken, Lieut. J. M. FADELEY, Falls Church.

To Otisville, N. Y., from Markleton, Lieut. N. J. GOULD, Norfolk.

To report to the commanding general, Northeastern Department, from Camp McClellan, Lieut. S. D. WILLIAMS, Norfolk.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Walter Reed General Hospital, D. C.,* from Camp A. A. Humphreys, Major J. M. GREER.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital,* for instruction, and on completion *to his proper station,* from Philadelphia, Lieut. B. E. STRODE, Amherst.

Wisconsin

To Camp Grant, Ill., base hospital, from Camp Dix, Lieut. N. F. CROWE, Walworth.

To Camp Upton, N. Y., base hospital, from Camp Hancock, Capt. W. S. DARLING, Milwaukee.

To Chicago, Ill., from Camp Custer, Lieut. H. F. DERGE, Eau Claire.

To St. Louis, Mo., from Camp Pike, Capt. C. O. LATHAM, Green Bay.

To Washington, D. C., Surgeon-General's Office, from Camp Lewis, Major J. R. McDILL, Milwaukee.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. I. F. THOMPSON, Eau Claire.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg. Gen. J. W. SCHERESCHEWSKY, proceed to Spartanburg, S. C., and other points in South Carolina and Georgia for the inspection of pellagra work and of new sites available.

Asst. Surg. Gen. H. S. CUMMING (Reserve), attend Red Cross meeting at Cannes; France; also meeting of Interdepartmental Social Hygiene Board at Paris.

Asst. Surg Gen. T. CLARK (Reserve), represent the Service at a meeting of the American Physical and Educational Association at Chicago, Ill., April 9-12.

Sen. Surg. J. O. COBB, proceed with laboratory car *Hamilton* or *Wyman* with personnel to Indianapolis, Ind., to attend the twelfth annual meeting of the Indiana Sanitary and Water Supply Association, April 9-10.

Surg. MARK J. WHITE, relieved from duty with the Navy, proceed to Palo Alto, Calif., and assume charge of the hospital at that place transferred by the War Department.

Surg. A. M. STIMSON, relieved at Newport, R. I., proceed to the Hygienic Laboratory for duty.

Surg. E. A. SWEET, relieved at the Hygienic Laboratory. Proceed to Camp Hancock, Augusta, Ga., to take charge of the hospital transferred by the War Department.

Passed Asst. Surg. H. F. WHITE, relieved at New Orleans quarantine station. Proceed to Washington, D. C., for duty in the division of venereal diseases.

Passed Asst. Surg. J. G. WILSON, proceed to Camp Logan, Texas, and other points in the South and West to inspect property which may be available for hospital uses.

Asst. Surg. J. W. TAPPAN, proceed to Las Vegas, N. M., for inspection of hospital property to determine its suitability for a tuberculosis sanatorium.

Asst. Surg. R. B. NORMENT, proceed to Washington, D. C., for temporary duty in connection with Public Health Service Reserve Corps.

Acting Asst. Surg. J. G. CULLINS, relieved at Fort Worth, Texas, proceed to Spartanburg, S. C., for duty in the pellagra hospital.

Acting Asst. Surg. SAMUEL LICHTENSTEIN, relieved at Columbia, S. C., proceed to Newport News, Va., for duty in extracantonment sanitation.

Acting Asst. Surg. W. B. ROBERTSON, relieved at Florence, Ala., proceed to Tarboro, N. C., for duty in public health work.

Acting Asst. Surg. T. D. TUTTLE, proceed to Tacoma, Wash., and assume charge of extracantonment sanitation.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

New Medical Society.—A meeting of the physicians of Bessemer was held in the circuit court rooms, February 14, for the purpose of organizing a medical society.

Marine Hospital to Be Enlarged.—The United States Marine Hospital at Mobile is to be enlarged at an expense of $100,000. Quarters are to be erected for the personnel of the official staff, and the present quarters are to be converted into wards for patients. This will double the capacity of the hospital, which will then be able to accommodate 100 patients.

Personal.—Dr. Henry B. Wilkinson, Montgomery, began his duties as county health officer of Montgomery County, March 1, succeeding Dr. Carney G. Laslie. Dr. Wilkinson has also been selected as chairman of the committee on sanitation and health in the work division of the chamber of commerce to succeed Dr. Paul S. Mertins, resigned.——Dr. Arthur A. Kirk, Tuscaloosa, has been named as full-time health officer of Tuscaloosa County, succeeding Dr. Charles M. Murphy, Aliceville, resigned.——Dr. George A. Cryer, Anniston, has been elected health officer of the unified district of Anniston and Calhoun County.——Dr. John S. Tucker, Blocton, has been appointed convict physician at Belle Ellen Mines.——Dr. Russell A. Smith, Brewton, physician inspector in congress in Alabama, has resigned.——Dr. Charles A. Mohr has been elected full-time health officer of the city and county of Mobile.

ARKANSAS

Personal.—Dr. Eustis J. Chaffin, Hughes, was wounded, February 15, in a fight with a negro, who was later killed by the physician.

Health Officers' Conference.—The sixth annual conference of city and county health officers of the state was held in Little Rock, February 27 and 28, under the presidency of Dr. Charles W. Garrison, Little Rock, state health officer.

New Officers.—Little River County Medical Association at its annual meeting in Foreman, February 26, elected Dr. John W. Ringgold, Ashdown, president; Dr. Wesley L. Shirey, Foreman, vice president, and Dr. William E. Vaughan, Richmond, secretary-treasurer.——Phillips County Medical Society at Helena elected Dr. Aris W. Cox, Helena, president; Dr. John W. Bean, Marvell, vice president, and reelected Dr. Montague Fink, Helena, secretary-treasurer.——At the meeting of the Mississippi County Medical Society held at Osceola Dr. Isaac R. Johnson, Blytheville, was elected president; Dr. William J. Sheddan, Osceola, vice president, and Dr. Earl E. Craig, Wilson, secretary-treasurer.

FLORIDA

Personal.—Dr. William D. Nobles has been reappointed a member of the health department of Pensacola.——Dr. Charles L. Jennings, Capt., M. C., U. S. Army, Jacksonville, on duty with Evacuation Hospital No. 9, who accompanied the Army of Occupation to Coblenz, has returned home.——Harper L. Proctor, Capt., M. C., U. S. Army, Jacksonville, attached to the 163d Aero Squadron, has returned from France.

Annual Meeting of Florida Board.—At the annual meeting of the Florida State Board of Health held in Jacksonville, March 7, new legislation was discussed. Dr. Calvin T. Young, Plant City, was appointed district health officer in charge of the Lakeland district. Dr. John Keeley, district health officer of Jacksonville, was transferred to Miami district, and Dr. W. H. Bryan was transferred to the Jacksonville district. Dr. Grace L. R. Whitford, Ozona, head of the child welfare bureau, will hereafter make her headquarters at Tampa and has been given an assistant, Dr. M. Josie Rogers, Daytona.

ILLINOIS

Smallpox in Peoria.—It is reported that there have been seventy-five cases of smallpox in Peoria. Vaccination of all schoolchildren who had not been vaccinated during the last three years has been ordered by the state board of health.

County Tuberculosis Hospital.—The Christian County Tuberculosis Board has been organized with Thomas J. Verler, Pana, chairman; Jesse P. Patterson, secretary-treasurer, the third member of the board being Dr. Thomas A. Lawler, Taylorsville. Christian County voted last November to establish and maintain a tuberculosis sanatorium for Christian County.

Personal.—Louis Ostrom, Capt., M. C., U. S. Army, Rock Island, on duty with Evacuation Hospital No. 49, is now with the American Army of Occupation at Coblenz, Germany.——Dr. John F. Brown, Kankakee, has been appointed superintendent of the Central Hospital for the Insane, Waupun, Wis., succeeding Dr. L. Rock Sleyster.——Dr. James W. MacDonald, Aurora, has been appointed a director of the Kane County Tuberculosis Sanatorium.

Chicago

Personal.—Selim W. McArthur, Capt., M. C., U. S. Army, formerly connected with Base Hospital Unit No. 14, has been ordered to Coblenz, Germany.——David S. Hillis, Lieut.-Com., M. C., U. S N. R. F., has returned from service in the Navy.

Dinner to Dr. Hunt.—The Vassar Alumnae Association of Chicago and the West gave an informal dinner, March 25, in honor of Dr. Barbara Hunt, Bangor, Me., of the American Women's Hospitals, who has just returned from service in France and who delivered an address, illustrated with stereopticon views. Dr. Alice Hamilton of the United States Department of Labor, associate professor of industrial medicine in the Medical School of Harvard University, also spoke.

IOWA

New Officers.—At the annual meeting of the Cerro Gordo County Medical Society held at Mason City, Dr. Stella M. Mason was elected president, Dr. Frank G. Murphy, vice president, and Dr. Stephen A. O'Brien, secretary-treasurer, all of Mason City.

Smallpox in Davenport.—March 5 and 6, seven cases of smallpox were reported in Davenport. Three of these cases have been taken to St. Robert's Hospital and the four other cases have been quarantined.——On March 8, eleven cases were found in one family which had been treated by a chiropractor.

Personal.—Dr. Lillie A. Arnett, Cedar Falls, has returned after service abroad with the Red Cross in France.——Edwin A. Merritt, Major, M. C., U. S. Army, Council Bluffs, who returned to America in March, has been promoted to lieutenant-colonel. He has been in charge of field roentgen-ray units with the Army of Occupation.——Dr. Harry P. Mason, Wilton Junction, has been reelected a member of the school board of Wilton.——Dr. Cassius L. Campbell, Atlantic, has been reelected a member of the board of education of Atlantic.——Emil O. Ficke, Capt., M. C., U. S. Army, Davenport, has returned to his home after seven months' duty in France.

LOUISIANA

Board of Health Annex.—At a meeting of the Louisiana State Board of Health, February 20, it was announced that a building had been purchased in New Orleans for $3,000 for the use of the board. The building will be remodeled.

Health Service Transferred.—The formal transfer of the Public Health Service from the United States to the city of Alexandria, the parish of Rapides and the state of Louisiana, was made, March 7, at a conference between Dr. Oscar Dowling, Shreveport, president of the state board of health; Capt. H. F. Smith, who has been in charge of the service since the establishment of Camp Beauregard; the mayor of Alexandria; commissioners Hunter and McGinnis, and Dr. C. W. Abbott.

Sale of Habit-Forming Drugs Curbed.—Two shipments of morphin consigned to New Orleans druggists have been confiscated by the president of the state board of health under the state law governing the sale and handling of narcotics.——The state board of health at its session, February 21, revoked the licenses of five physicians of New Orleans for prescribing habit-forming drugs, and the license of one New Orleans druggist was revoked. The licenses of a number of country physicians were also revoked for the same offense.

MARYLAND

Personal.—Col Hugh H. Young, Baltimore, who recently returned from France, addressed the Baltimore Life Underwriters' Association at their annual banquet, his subject being the health conditions among the American soldiers.

Anniversary of West End Medical Association.—The first anniversary of the West End Medical Association of Baltimore was celebrated on March 21 by a clinic at the Franklin Square Hospital in the afternoon and a banquet at the Hotel Emerson in the evening. Health Commissioner John D. Blake was the speaker at the banquet and made an address on "The Health of Baltimore." Dr. Asa L. Wessels is the president; Dr. Charles S. Parker, vice president; Dr. William A. Knell, secretary, and Dr. Egbert L. Mortimer, treasurer.

Mumps Prevalent in Baltimore.—Mumps is prevalent in Baltimore, the northern and western sections being especially affected. One hundred and forty-eight new cases were reported to the health department during last week, but it has been more or less epidemic in the city for several months. Many of the cases are accompanied by severe vomiting and an unusual proportion of those affected are adults. Of scarlet fever 178 cases were also reported to the health department during the past week. They are widely scattered all over the city.

MICHIGAN

Medical Staff Organized.—The medical staff of St. Joseph's Hospital, Menominee, organized recently, electing Dr. Walter R. Hicks president, Dr. Stephen C. Mason secretary-treasurer, both of Menominee, and Dr. George F. Colter, Marinette, Wis., chairman of the executive committee.

Tuberculosis Publication for the Public.—The Michigan Anti-Tuberculosis Association has adopted a plan of limited circulation for its new magazine, *Michigan Out-of-Doors.* The publication may be obtained by sending a postal card request giving name and address to the Michigan Anti-Tuberculosis Association, Science Building, Detroit.

Personal.—Angus McLean, Col., M. C., U. S. Army, director of Base Hospital No. 17, A. E. F., for twenty months past, has returned to Detroit. Walter D. Ford, Major, M. C., U. S. Army, Detroit, commander of the unit returned on the same transport.——Leo J. Dretzka, Capt., M. C., U. S. Army, Detroit, has returned from overseas.——Dr. William K. Wright, Manistique, is ill in a hospital in Chicago suffering from carcinoma of the intestine.——Dr. Matthew B. Smith, Fenton, suffered severe cuts and bruises when his car was wrecked by a motor truck, March 3.

MINNESOTA

Reconstruction Work.—At a noonday meeting in St. Paul, March 12, W. S. Miller, Capt., U. S. Army, chief of the educational service at Fort Snelling, gave a talk on reconstruction work at Fort Snelling.

Personal.—Dr. Harry M. Guilford, health commissioner of Minneapolis, is ill with diphtheria and is under treatment at the City Hospital.——Dr. Edward T. Sanderson, Minneota, and Dr. Frank D. Gray, Marshall, have been appointed members of the executive board of the Lyon County Public Health Association.

MISSOURI

Personal.—Dr. George B. Mangold has been elected first vice president and Louis P. H. Bahrenburg, Surg., U. S. P. H. S., medical director of the St. Louis Tuberculosis Society.——Dr. William C. Baird, Bogard, fell on the ice, March 4, fracturing his clavicle and sustaining severe bruises of the hip and right hand.——Dr. Julien A. Gehrung, St. Louis, who has been on duty with the French army since February, 1917, has returned from France.

Missouri Officers Association Formed.—The Missouri Officers' Association is the name of an organization recently formed for the purpose of perpetuating the association of army officers from Missouri who served during the recent war. It is an outgrowth of the Fort Sheridan and Fort Riley association. All medical officers in Missouri who desire to affiliate should address the Missouri Officers' Association, 304 Rialto Building, St. Louis.

Reconstruction Hospital Completed.—The government reconstruction hospital at St. Louis will probably be completed and ready for occupancy by the injured soldiers, April 1. The building taken over by the government is the one formerly used by the city of St. Louis for housing its infirm and decrepit who have become charges on the city's bounty. These unfortunates have been transferred to the commodious building and grounds formerly occupied by the Christian Brothers College which the city has purchased. The government has spent $700,000 in remodeling and equipping the building to be occupied by the wounded soldiers. A staff of about forty-five army surgeons and eighty nurses will be assigned to the institution which has been constructed to accommodate about 1,000 patients. The equipment will be thorough and complete in every respect and it will be one of the best equipped institutions of the kind now under control of the Medical Department of the Army.

MONTANA

Temporary Health Officer.—Dr. Albrecht D. Eckardt, Helena, who recently received his discharge from the Army, has accepted a temporary appointment as health officer of Bozeman.

Fine for Violation of Drug Act.—Dr. Charles Pixley, Missoula, indicted by the federal grand jury on the charge of violation of the federal law regulating the issuance of habit-forming drugs, and also for failure for two years past to keep a record of prescriptions for such drugs, as required by law, is said to have pleaded guilty in the United States district court, March 10, and to have been fined $100 and costs.

NEBRASKA

Board of Health Bill.—February 5, a bill providing for municipal boards of health in cities of from 5,000 to 25,000 population and limiting the jurisdiction to municipal boundaries, was read a third time and passed.

Personal.—Dr. Samuel J. Stewart, Hastings, has been appointed a member of the advisory board to the state board of health, succeeding Dr. Hall H. Humphrey, Daykin.——Dr. W. W. Kohler, Lexington, is reported to be ill in Los Angeles.

Medical College Fund Suffers.—The legislative finance committee has eliminated the proposed appropriation of $40,000 for a laboratory for the University of Nebraska College of Medicine, Omaha; has reduced the appropriation for new equipment at the University Hospital from $30,000 to $20,000 and the appropriation for maintenance of the hospital from $150,000 to $125,000.

Hospital News.—Drs. S. R. Ayer and Luman B. Swaggart, McCook, have purchased the McCook General Hospital, which was owned and operated by the late Dr. David J. Reid.——The Good Samaritan Hospital, Kearney, has secured a site and a campaign has been launched to raise $100,000 for the erection and equipment of the hospital, which will have accommodations for fifty patients.

NEW JERSEY

Personal.—Mr. T. W. Margerum, Princeton, health officer, registrar of vital statistics, and bacteriologist of Princeton and Princeton University, has succeeded Charles L. Williams, Asst. Surg., U. S. P. H. S., as head of the city health department of Macon, Ga.

NEW YORK

Personal.—Daniel E. Pugh, Jr., Capt., M. C., U. S. Army, Elmira, arrived in New York on his return from France, March 6.——Pearce Bailey, Col., U. S. Army, New York City, has been released from military duty and has been appointed medical chairman of the state commission for the feebleminded to succeed Dr. Walter B. James, resigned.

Diphtheria in Sing Sing.—Reports from Sing Sing Prison state that, March 16, there were sixty-five prisoners down with diphtheria, twenty-five of these having been reported within twenty-four hours. Influenza is still more or less prevalent in the institution and that with other ailments brings the total number of patients up to 115, which has necessitated bringing in additional medical and nursing care from outside.

Hearing on Health Insurance Bill.—According to an announcement made by Senator Davenport the Davenport-Donohue bill which provides for compulsory health insurance has been amended to meet some of the objections made by physicians. Chief among the amendments is a provision by which physicians will not be on a salary, but will be paid according to services rendered under the schedule of fees to be approved by the state industrial commission and which may vary according to local conditions. Provision is made for hearings on the schedules so that they may be revised from time to time. Provision is also made for the free choice of a physician by the patient, thus eliminating the panel originally provided for. Perhaps the most important change in the bill is that which provides that the head of the proposed bureau of health insurance shall be a physician. It is estimated that the cost of this insurance will be 24 cents a week each to employer and employee. At the public hearing, March 19, opponents of the bill stated that according to their estimate it would cost $5,000,000 a year to administer the bill instead of $3,500,000 as the sponsors of the bill claim. Among the opponents of the bill appearing at the hearing were merchants, manufacturers, physicians and fraternal orders. The spokesmen for the bill were the labor unions and women's organizations.

New York City

New Maternity Clinics.—The New York Milk Committee as a part of its plan for extending antenatal work has opened three new maternity clinics in the Bronx, one at the Bronx House, 1637 Washington Avenue; a second at 2380 Hughes Avenue, and a third at 513 East One Hundred and Forty-Ninth Street. Among those speaking at the formal opening of these clinics were Drs. John H. Telfair, Morris L. Ogan, Ralph W. Lobenstine and Arthur J. O'Leary.

Conference on Rehabilitation.—The Red Cross Institutes for Crippled and Disabled Men held a conference which was international in scope at the Waldorf, from March 18-21, at which there were representatives from France, England, Belgium and Italy, and thirty delegates from Canada. The American agencies which were represented included men and women from the office of the Surgeon-General, the Army, the Federal Board for Vocational Education and the Bureau of War Risk Insurance. A closing mass meeting was held on Sunday afternoon at the Hippodrome at which Charles E. Hughes presided. Dr. Maurice Bourillon, president of the permanent interallied committee on war cripples and director of the French national institute for crippled soldiers, described the beginning of the making over a 694,000 Frenchmen incapacitated by war diseases or wounds. It was stated at the meeting that of the men returning from overseas at least 100,000 are not unscathed, being crippled, blinded or gassed and will need the grateful help of America before they can take the place they have earned in life. Dr. C. A. Prosser, director of the Federal Board of Vocational Reeducation, estimates that the number who will require vocational reeducation will reach 20,000.

NORTH CAROLINA

State Society to Meet.—The annual meeting of the Medical Society of the State of North Carolina will be held at the Carolina Hotel, Pinehurst, April 15-17, under the presidency of Dr. Cyrus Thompson, Jacksonville.

Urologic Clinic Chartered.—The Crowell Urological Clinic of Charlotte has been incorporated with a capital stock of $125,000, by Drs. Andrew J. Crowell, Robert H. Lafferty, Joseph A. Elliott and S. Raymond Thompson.

Hospital to Reopen.—The Wesley-Long Hospital, Greensboro, will be reopened about April 1, and will be under the charge of John W. Long, Lieut.-Col., M. C., U. S. Army, who has just been discharged, after having been in service since June, 1917, in this country and with the American Expeditionary Forces in France.

Clinic for Charlotte.—A conference of physicians was held at the city health office, Charlotte, March 8, at which Dr. Carl Fellers discussed with the medical men the projected establishment of a clinic for venereal disease, to be operated jointly by the city of Charlotte and Mecklinburg County, with financial aid from the state and the United States Public Health Service.

Personal.—Marshall H. Fletcher, Major, M. C., U. S. Army, Asheville, who has been in command of Base Hospital No. 65, Kerhoun, France, has been discharged from service, and will resume practice in Asheville.——Dr. Harvey P. Barret has been elected city bacteriologist of Charlotte, succeeding Lloyd R. Jones, Asst. Surg., U. S. P. H. S., who has been transferred to Fayetteville.

Mosquito Eradication.—The United States Public Health Service will give the city of Wilmington $10,000 for the continuation of the work of mosquito eradication, provided an appropriation of like amount is made by the city of Wilmington and New Hanover County. The work already done has included the digging of 20 miles of ditches, the clearing of 17½ miles of streams, the construction of 1½ miles of dikes, the installation of six tide-gates and the spraying of large quantities of crude oil over the waters of the swamp lands.

OHIO

Personal.—Dr. Harry L. Rockwood, acting health commissioner of Cleveland, since Dr. Robert H. Bishop, Jr., went to Italy with the American Red Cross Tuberculosis Mission, has resigned and expects to enter private practice.——Henry M. Pearce, Capt., M. C., U. S. Army, Urbana, recently discharged after a year of service overseas with the Eighty-Third Division, is reported to be critically ill with meningitis.——F. Dale Barker, Capt., M. C., U. S. Army, Dayton, has returned from overseas.——Dr. Charles A. LaMont has resigned as city health officer of Canton, to take effect April 1.

OREGON

Personal.—Dr. George Parrish, city health officer of Portland, who has been away on leave of absence for two months, has returned and has resumed his duties.——Dr. John G. Abele, who has been serving as acting city health officer of Portland, has now become first assistant health officer in charge of contagion in Portland.——Drs. Calvin S. White, G. Norman Pease and Harold C. Bean, all of whom have served in the Army in this country or abroad, have been added to the staff of Reed College Clinic, Portland.——Dr. Rasmus P. Mortensen, Springfield, underwent operation for tuberculosis of the intestines in a Portland hospital, February 27.——Frank R. Mount, Major, M. C., U. S. Army, Oregon City, and on duty with the A. E. F. in France, has been promoted to lieutenant-colonel, M. C.——Edwin W. Morse, Capt., M. C., U. S. Army, Portland, on duty with Base Hospital No. 46, returned, February 25, after nine months' service in France.——Fred A. Lieuallen, Capt., M. C., U. S. Army, Portland, on duty with the Forty-Seventh Infantry, A. E. F., in France, thrice cited for bravery, has been discharged, disabled from having been gassed, and has returned to Portland.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Percival M. Kerr, Elwyn, medical attaché to Admiral Wilson and former member of the Methodist Hospital Unit, has returned from France where he has been since October, 1917.——Dr. Orlando H. Petty, Lieutenant in the Naval Reserve Force, has been awarded the Distinguished Service Cross for extraordinary heroism.——Dr. H. H. Wickert, now serving with the Episcopal Hospital Unit No. 34, with the Army of Occupation, has been promoted to the rank of major. He enlisted in the British army before this country entered the war and subsequently was transferred to the Episcopal Hospital Unit.——Drs. Edward Martin and John D. McLean, commissioner and assistant commissioner of health of Pennsylvania, will be the guests of honor at a dinner given by the Philadelphia Clinical Association and other medical organizations in and near Philadelphia, at at Bellevue-Stratford, April 10.

SOUTH CAROLINA

Personal.—Dr. William O. Wrightson, who has just been discharged from the Medical Corps, U. S. Army, has been appointed director of health of Spartanburg, succeeding Hugh D. Ward, P. A. Surg., U. S. P. H. S.——Dr. James C. Mitchell, Anderson, formerly health commissioner, who has just returned from army service, has been reappointed to that position, succeeding Dr. E. R. Vandergrift, resigned.——H. F. White, P. A. Surg., U. S. P. H. S., who has been in charge of the work of the service in Greenville and the surrounding territory since April, 1918, and who served for several months as health commissioner of Greenville, has been ordered to other duties. The city council, at a special meeting, February 25, adopted resolutions of thanks and appreciation.

SOUTH DAKOTA

Personal.—Dr. James O. Lee, Pierre, has been appointed physician and surgeon of the U. S. Indian School, Pierre, succeeding Dr. Charles M. Hollister.

New Clinic.—The old Methodist Church property, Sioux Falls, has been sold to Drs. Thomas J. Billion, Monte A. Stern, Earl E. Gage, Nelius J. Nessa, Guy E. VanDemark, George A. Stevens, Edwin L. Perkins and Roy G. Stevens. On this site will be erected a building at a cost of $60,000, to be known as the Sioux Falls Medical and Surgical Clinic.

TENNESSEE

State Association to Meet.—The Tennessee State Medical Association will hold its eighty-sixth meeting in Nashville, April 8-10, under the presidency of Dr. Richmond McKinney, Memphis.

Personal.—Dr. William Krauss, Memphis, has been elected medical director of the Memphis and Shelby County Anti-Tuberculosis Society, and Drs. A. B. Curry, William T. Pride, William Krauss, T. W. Lewis, Harry F. Minor and Cooper Battle are the medical members of the board of directors.

Endowment for Meharry.—Report states that the General Education Board and the Carnegie Foundation for the Advancement of Teaching have each voted to give $150,000 for the endowment of Meharry Medical College, Nashville, provided the Methodist Episcopal Church will raise $200,000, which would make a total of $500,000. From the standpoint of number of students enrolled, Meharry Medical College is the largest negro medical school in the country.

City to Take Over Federal Clinic.—The city of Chattanooga has arranged to take over the operations of the federal government venereal clinic, located in the city hall, under the charge of Asst. Surg. Carlisle P. Knight, U. S. P. H. S. Dr. Stanton S. Marchbanks will be left in charge of the clinic.——Col. Mack Morris, formerly of Trenton, now of Jackson, has offered to donate to the city of Trenton a hospital to cost not less than $15,000. The only obligation to the city is to keep the hospital in as good a condition as it was when presented.

TEXAS

New Editor.—Dr. Paul Gallagher, El Paso, has been elected editor of the *Southwestern Medical and Surgical Journal* in place of Dr. Elliott C. Prentiss who has resigned.

Chiropractor Fined.—It is reported from El Paso that Dr. Byron Black, a chiropractor, was found guilty of practicing medicine without a license and sentenced to a day in jail and a fine of $250.

New Officers.—Bee County Medical Society at its annual meeting held in Beeville elected Dr. Lawrence L. Griffin, president; Dr. Andrew J. Turner, vice president, and Houston Neeley, secretary.

Hydrophobia Bill Passed.—The senate committee on public health has reported favorably on the Hertzberg bill which provides for the free treatment of hydrophobia at the State Pasteur Institute, Austin.

New State Board Officers.—At a meeting for organization of the new state board of medical examiners held in Waco, February 28, Dr. William C. Swain, Dallas, was elected president; Dr. E. Marvin Bailey, Houston, vice president, and Dr. Manuel F. Bettencourt, Mart, secretary.

City Takes Over Laboratory.—Formal transfer of all the equipment in the United States Public Health Service laboratory at Fort Worth was made to the city health department, February 11. This is the first step in taking over by the city all the health work heretofore carried on by the federal government.

Bill Passed to Establish State Quarantine.—The senate committee on public health rendered a favorable majority report, February 18, on the Fly house bill which provides for turning over to the federal quarantine authorities the state quarantine stations and matters at gulf ports and along the border.

Personal.—William B. Carrell, Capt., M. C., U. S. Army, Dallas, on duty at the Orthopedic Hospital, Bordeaux, France, has been promoted to major.——Robert Finney Miller, M. C., U. S. Army, who has been in France for more than a year, has returned to his home, near Gay Hill.——William L. Crosthwait, Major, M. C., U. S. Army, Waco, who has been on duty at Base Hospital No. 55, A. E. F., in France, has been discharged and has returned home.

Health Association Meeting.—At the annual meeting of the Texas Public Health Association held in Austin, February 12, the following officers were elected: William A. Bowen, Arlington, president; Drs. Elva A. Wright, Houston, and Beverly T. Young, San Antonio, vice presidents; Dr. Zachary T. Scott, Austin, secretary, and H. A. Wroe, Austin, treasurer. In addition to the officers named the following were elected members of the board of directors. Drs. C. B. Baird, Dallas; William M. Brumby, Waco; Orville T. Bundy, Hutto; Ira C. Chase, Fort Worth; Boyd Cornick, San Angelo; Robert B. Homan, El Paso; John S. Lankford, San Antonio; Joseph B. McKnight, Carlsbad; Frank Paschal, San Antonio, and C. W. Goddard, Austin. During the year more than 400,000 pieces of literature bearing on public health were distributed, more than 300,000 children were organized in the modern health crusade movement, and more than 30,000 personal letters were written by the association.

WASHINGTON

Chinese Doctor Held.—Sing Lock of the Sing Lee Chinese Medicine Company, Seattle, it is reported, was arrested, March 5, on charges of having opium in his possession and was released on bail of $500.

Personal.—Dr. Albert E. Stuht, Spokane, was sent, March 7, to Olympia by the Spokane County commissioners, to urge the passage of Senate Bills 6 and 96 which have reference to the isolation of individuals suffering from venereal disease.——Dr. Howard H. Smith has been appointed health officer of Yakima city and county succeeding Dr. Benjamin S. Cerswell, North Yakima. He takes office June 5.——Dr. John B. Anderson, resigned, March 4, as health officer of Spokane, to resume duties as state health commissioner.——Ralph Hendricks, Major, M. C., U. S. Army, who is expected to return from France before May 1, has been appointed health officer of Spokane.——Harry C. Blair, Lieut., M. C., U. S. Army, Tacoma, a member of Base Hospital Unit No. 46, arrived in Tacoma, February 23, after seven months in France.——Dr. Jesse J. Tilton, Spokane, has been elected a member of the board of directors of the Social Service Bureau.——Dr. Perry W. Cornue, Yakima, has been elected president of the Illinois Club.

CANADA

University News.—McGill University will erect a memorial hall to honor her fallen graduates and undergraduates. It will be a convocation hall and will cost about $150,000.

Personal.—Col. John M. Elder, Montreal, has returned from overseas.——The name of Sir Auckland C. Geddes, Montreal, formerly professor of anatomy in the University of McGill, is mentioned to succeed Sir William Peterson in the principalship should the latter not be able to continue his official duties on account of having recently suffered a paralytic attack.——Col. George E. Armstrong, C.M.G., Montreal, has become consultant in surgery at the Royal Victoria Hospital, Montreal.——The Hon. Dr. Robert A. Pyne, Toronto, formerly minister of education for Ontario, has been appointed to the board of governors of the University of Toronto.

Hospital News.—Ottawa, Canada, is asking permission of the Ontario legislature to raise $1,500,000 for establishing a civic hospital.——A citizen of Kitchener, Ont., offers $25,000 for a nurses' residence in connection with the Kitchener-Waterloo Hospital, provided $10,000 can be raised by the board from public subscription.——The government of Quebec and the government of Canada will provide the funds for enlarging the Ste. Agathe Sanatorium, Quebec, so as to increase the accommodations from 70 to nearly 300 beds. The extensions are to cost in the neighborhood of $300,000, and the institution will be used for five years for tuberculous soldiers.——Vancouver is to have a new emergency hospital. The entire cost will be about $30,000. The provincial government of British Columbia will contribute $15,000.——The Toronto city council has been asked for a grant of $40,000 toward liquidating the deficit of the Hospital for Sick Children which amounts to $89,753.——An addition is to be erected to the Royal Victoria Hospital, Montreal, at a cost of $12,000.

Ontario Social Hygiene Committee.—Following up the interim report on venereal diseases in Ontario, Mr. Justice Hodgins, who sat as royal commissioner, has presented a second report to the Ontario government, containing his recommendations. He recommends the appointment of a general committee, large enough to provide for its division into sections devoted to special departments of propaganda, and suggests the foregoing name for the committee. He recommends that the chairman of the provincial board of health should be the chairman of the executive committee of the organization. He also recommends that the government provide the money necessary to carry on this work, and that aid should be secured from the Ottawa government. A compulsory course is to be made for medical students in the venereal diseases. He says that salvarsan is a product protected by a German patent. In Canada only two licenses to manufacture it have been granted, and 5 per cent. of the gross sales have been reserved, presumably for the ultimate benefit of the German owners. Only one license has made any progress in Canada in producing it, although the licenses were granted in 1915. The patent commissioners had refused to allow the Ontario Board of Health to manufacture it. He thought this refusal was a national mistake, unless the federal government intended to undertake its production on a large scale.

GENERAL

Base Hospitals Discontinued.—The base hospital at Camp Custer, Mich., and the one at Travis, Texas, have been discontinued and will hereafter be operated as camp hospitals.——No overseas patients will hereafter be sent to Camp Doniphan, Okla.

Flight Surgeons Meet.—Members of the Medical Department of the Air Service of the Army who compose the Flight Surgeons Association met in Dallas, Texas, March 24 to 26. Dr. John O. McReynolds, Dallas, is president of the association and among those who are expected to be present are George H. Crabtree and Albert E. Truby, Cols., M. C., U. S. Army, chief medical executive officer and chief of the air service, respectively.

FOREIGN

Cholera and Influenza in Japan.—It is reported that epidemics of cholera and influenza are prevailing in Japan.

The Schwabacher Prize.—The Schwabacher prize of 20,000 marks was recently divided between Professors Rubner and Zuntz, both of Berlin, for their work on diet in war time.

Reception to American Physicians in London.—A reception was given to 100 American Army medical officers in London, March 19. These officers had arrived in London to take up postgraduate work in England. Sir Humphrey D. Rolleston, president of the Royal Society of Medicine, acted as toastmaster and among the other speakers were Sir Rickman J. Godlee, president of the Royal College of Surgeons; Sir Norman Moore, president of the Royal College of Physicians, and Sir William Arbuthnot Lane.

Some Vital Statistics in Germany, 1914-1917.—J. Schwalbe in a signed editorial in the *Deutsche med. Wochenschrift*, Dec. 12, 1918, states that the mortality from tuberculosis in Germany has increased from 15.7 to 31.7 per ten thousand inhabitants. In 380 towns of over 15,000 inhabitants, the deaths in 1918 from tuberculosis total 43,320 above the figure for 1913. In Berlin the average death rate per month among women has increased from 1,907 in Oct., 1915, to 3,136; the deaths from phthisis, from 205 to 1,752.

Women Decorated by the French Government.—Dr. M. Louise Hurrell, Rochester, N. Y., director of American Women's Hospital No. 1, Luzancy, France, and three of her staff, Mrs. Lenoire-Lehman, purchasing agent and interpreter, and Miss Pettengill and Miss Whitaker, nurses, were decorated by the French government for stamping out the typhoid epidemic in certain cantons of Seine-et-Marne and Aisne.——Dr. Cora H. M. Allen, Heron Lake, Minn., and Eva C. Reed, San Francisco, members of the American Women's Hospital, were also decorated for like service.

Red Cross Hospital in Serbia.—The American Red Cross Hospital established at Monastir, Serbia, under the care of Dr. Regina F. Keyes, Buffalo, is the American Women's Hospital of the American Red Cross and was located until recently in Vodena, Greece. The American Women's Hospitals Organization, by the War Service Committee of the Medical Women's National Association, has given $25,000 for the maintenance of this hospital. Dr. Keyes has been abroad since November 17, and has worked constantly without vacation or change of any kind, operating three times a week, seeing daily between sixty or seventy dispensary patients, and visiting the families of 3,000 refugees.

Deaths in the Profession Abroad.—Dr. **E. Rossoni**, until recently professor of medical pathology at the University of Rome, aged 71.——Dr. **P. Tria**, director of the municipal hospital at Tripoli, member of the editorial staff of the *Riforma Medica*, and formerly lecturer on clinical medicine at Naples, aged 34.——Dr. **Adolf Schmidt**, professor of internal medicine at the University of Halle, a pioneer in the study of diagnostic methods in intestinal disease, author of numerous works on the subject, aged 54.——Dr. **M. Dalmau**, of Barcelona, the first to discover the existence of icterohemorrhagic spirochetosis in Spain. He had not long returned from a graduate course of training in biologic chemistry and bacteriology in this country on a traveling scholarship provided by the Spanish Junta de Ampliacion de Estudios.——The *Nederlandsch Tijdschrift* reports further the deaths of Dr. **E. v. Herczel**, professor of surgery at the University of Budapest; Dr. **K. H. v. Bardeleben**, the anatomist, professor of anatomy at the University of Jena and author of a long series of works on anatomy, spermatology and evolution, aged 69; and Dr. **R. Kobert**, professor of pharmacology, physiologic chemistry and the history of medicine at the University of Rostock, an authority on materia medica and physiologic chemistry, intoxications, etc., aged 65.

BUENOS AIRES LETTER

Buenos Aires, Feb. 10, 1919.

Death of Professor Piñero

The professor of physiology of the Facultad de Medicina of the Univeristy of Buenos Aires, Dr. H. G. Piñero, died recently at Mar del Plata.

Headquarters for Public Health Work in Catamarca

The Departamento Nacional de Higiene has recently inaugurated a regional sanitary station in Catamarca, designed principally to combat malaria in that part of the country.

The Hospitals of Buenos Aires

The appropriations for the municipal hospitals of Buenos Aires were scanty even before the war, but they are entirely inadequate now that the prices of drugs and provisions have increased so considerably. The municipal authorities appear to appreciate this, and in their discussions seem to be inclined to enlarge the appropriations.

Regulation of Prostitution

The Socialist member of the city council, Dr. Jimenez, has proposed that regulation of prostitution be abandoned. He argues that the present measures for regulation in reality amount to a legalized slavery, and that the medical oversight is illusory, as 90 per cent. of the persons with venereal disease who are given treatment in public institutions acquired the disease in houses given official inspection. He advocates the creation of ten night dispensaries for giving aid to persons with venereal disease.

Secularization of the Hospitals

In the hospitals of Buenos Aires, religious sisterhoods perform certain administrative functions or serve as nurses The Socialist members of the city council have proposed the secularization of the hospitals and ask the suppression of religious propaganda and the doing away with the Roman catholic chaplains. The clergy of any sect could be summoned as is the rule at present.

Progress of Public Health at Buenos Aires

According to the data compiled by Dr. Coni, 69,272 persons have died from pulmonary tuberculosis at Buenos Aires in the last fifty years. The mortality, which was 27.2 per ten thousand in the second decade, dropped to 17.4 per ten thousand in the last decade.

Smallpox has disappeared completely from the city, since the vigorous campaign instituted by Dr. Penna in 1910. Compulsory vaccination stamped the disease out entirely.

Between 1887 and 1890 diphtheria was responsible for half the mortality. In the last five decades the mortality from it has been 10.3, 10.9, 11.9, 1.7 and 1.6.

Typhoid fever was endemic here until sanitary measures were introduced. Since then it has appeared in epidemic form at times, but is growing less frequent each year. The general mortality from all other infectious diseases has declined by slow degrees with the progress in public hygiene.

LONDON LETTER

London, March 5, 1919.

The Ministry of Health

Dr. Addison, president of the Local Government Board, has introduced the expected Ministry of Health bill. He said that during the last four years we had lost about 700,000 of our race in the war. During the months of October, November and December last, there was as high an average mortality per month from influenza alone as the average monthly mortality during the war from causes connected with the war. Those who were lost were largely people in the prime of life. There was no doubt that in this matter our practice was far behind our knowledge. We had in the elementary schools an army of children physically defective. What a source of national weakness they were was revealed during the war when hundreds of thousands were unable to pass even the modest standard of physical fitness that the army required. At present a large number of different departments and about 1,800 local authorities deal with public health. Steps must be taken to unify control and get common direction. This country ran the risk of the introduction into it on demobilization of a number of diseases, some of them of a very dangerous kind, from which it had hitherto, or for many years past, been free. Large numbers of soldiers had been affected by dysentery, malaria and other diseases, and an endeavor was being made by joint action of the departments—the War Office, the Admiralty, the Air Ministry, and the Local Government Board—to take steps in common, as far as that was possible, to prevent the introduction and spread of various tropical and other diseases. In the proposed reform there would be two stages, first, to bring together the government's departments concerned in health—the Local Government Board, the insurance commissioners, the board of education and the privy council. This gave the central authority which controlled all the general services of the country, particularly those that related to infancy and maternity. At a later stage powers of control with respect to malnutrition and the ministry of pensions in regard to disabled sailors and soldiers would be taken over. This was not done now because the first amalgamation was a quite big enough undertaking. The ministry of health does not take over the Central Medical Research Committee, which has done such excellent work during the war. This is placed in a detached and independent position under the privy council and will be as wide in its operations as the empire. An important change is the separation of the treatment of sickness from all relations with the poor law. Sickness in the future will be dealt with as a whole from the point of view of the nation and not in relation to destitution. The minister of health will have very wide powers dealing not only with medical services but with preventive services. Thus housing will be in his charge. There will be a wide extension of facilities in connection with nursing, midwifery, diagnosis, hospitals, etc. At present nobody suffered more than the poorly paid classes. Voluntary hospitals looked out for the poor, and there was always a long waiting list. But the poor middle classes cannot afford the fees of the great expert and they do not want to be recipients of charity. Beyond and above any extension of remedial service, prevention is what the ministry must aim at.

A Medical Trade Union

As stated in a previous letter to The Journal, the projected ministry of health has aroused considerable apprehension in the profession, as it is expected to involve further state control and perhaps the introduction of whole-time medical service. The experience of the national insurance act is considered anything but assuring, but the critics of the government differ widely among themselves. The profession is divided into at least three factions — the panel physicians, who have formed themselves into a trade union (the Medico-Political Union); the National Medical Union, which is and always has been bitterly opposed to the insurance act, and the British Medical Association, which endeavors to protect the interests of the profession as a whole but satisfies neither of the two former bodies, who are extremists. The futile attempt to organize the whole profession by a meeting in London called together by the National Medical Union has already been described. It broke up in confusion when the proposal in favor of a trade union, brought forward by members of the Medico-Political Union, was declared lost. The Medico-Political Union has now retorted by calling another mass meeting of the profession to discuss the following resolution: "That in view of the far-reaching changes inevitable in the medical services of this country consequent on the coming Ministry of Health, it is essential that the profession should be solidly and democratically organized on a trade union basis to enable it to negotiate effectively with the government in the interests of the community, no less than those of the profession." About 300 physicians attended. The chairman said that the meeting had been arranged because of the changes which were foreshadowed by the ministry of health bill, which made it imperatively necessary that every branch of the profession should be able to gain a hearing for itself when the provisions of that measure came to be discussed. Panel practitioners would remember what took place seven years ago. The question for them to consider was whether they were any better prepared today to meet the changes that were taking place in their life and work. He was afraid they were not. They had a hope now that they would be able to regain their professional dignity and independence. It had never been their object to strike against sick persons; but, nevertheless, the worm might eventually have to turn, and they must keep an open mind on that subject. In the discussion, the main argument was the success with which trade unions dealt with the government as compared with the failure of the present medical organizations, and the audience showed itself strongly favorable to this view. The opposition was not strong. The main arguments used were that the profession as a whole would never accept trade unionism, and therefore a trade union would further divide it. An appeal to remember the dignity of the profession, and that on those present had fallen the mantles of Harvey and Jenner, fell on deaf ears. An amendment going farther than the resolution: That the trade union be affiliated to the labor party and trade union congress was moved. It was contended that it would be a great advantage to have the whole weight of the trade union movement behind any demand. Against the amendment was urged the fact that the Medico-Political Union consisted of physicians of all political views and that to many the labor party was anathema. The amendment was rejected by an overwhelming majority. The original resolution was carried by 207 against 30. The Medico-Political Union regards the result with great satisfaction, but it must be remembered that all of the physicians in the metropolitan area numbering about 7,000 were invited by a postcard stating the object of the meeting. Probably a higher proportion of the members of the union and of others in favor of the project attended than of those opposed to it. Hence the voting cannot be taken as representative of the profession.

The Influenza Epidemic

Influenza shows some signs of abating in certain areas in London. In North Yorkshire, however, it is on the increase. In Durham County all the elementary schools are closed for three weeks, and whole families are stricken. In Leeds all the elementary schools have been closed. In Edinburgh during the week, 316 deaths occurred, equal to 48.6 per thousand of the population, the highest figure ever reached until the week before last, when an identical number was recorded. These high rates are largely due to the influenza epidemic. The disease is rife in Dublin, and the death rate has risen steadily. A special meeting of the corporation has been called with the object of making it compulsorily notifiable. The medical staffs of the hospitals advised the closing of all schools, theaters, picture houses and public libraries. The epidemic is spreading all over Ireland. The Local Government Board has published a memorandum advising the public not to make a general use of face masks during a period of influenza prevalence. Face masks, however, should be used as much as possible by those who attend on the sick. Although no form of inoculation can be guaranteed to secure immunity, the board says there need be no hesitation in accepting inoculation when it is administered under competent medical advice.

PARIS LETTER

Paris, Feb. 27, 1919.

Vital Statistics of France

The publication of annual or semiannual vital statistics reports was suspended in France during the war. All or at least part of eleven départements were invaded by the enemy, therefore, detailed information on these matters was not available. The ministère du travail (labor) has published in the *Journal officiel* the official statistics for 1915, 1916 and 1917 of seventy-seven départements, and the figures for 1913 are given for purposes of comparison. Although these data are by no means complete, not including all of the country for 1913, they suffice to elucidate the enormous loss in population resulting from the war, and the demographic consequences which follow in the wake of these happenings.

For the seventy-seven départements concerned, the number of births and deaths was as follows:

	Births	*Deaths*
1913	604,811	587,445
1914	594,222	647,549
1915	387,806	655,146
1916	315,087	607,742
1917	343,310	613,148

These statistics show that while in 1913 the number of births exceeded the number of deaths by 17,366, the deaths in 1917 exceeded the births by 269,838. In these seventy-seven départements alone, therefore, the deaths were in excess of 883,160 dating from the beginning of the war to the end of 1917.

It must be noted that these statistics do not include the eleven invaded départements in which war was waged for fifty-two months and in which the losses caused by the war were not counted, but which officially have been stated as being 1,400,000 men.

Deaths

The death is announced of Dr. Henri Henrot, aged 85 years, a former mayor of Reims, vice president of the Conseil supérieur de l'Assistance Publique and corresponding member of the *Académie de médecine.*

Dr. Charles Bonnet, vice president of the Association des médecins légistes, is dead, aged 47 years. Soon after the beginning of the war he placed at the disposition of the Allies the Maison de santé in Paris, of which he was director. This institution became the Canadian hospital and then the hôpital de l'Ecosse.

Dr. *Hippolyte Morestin,* associate professor in the Paris medical faculty, surgeon of the hôpital Tenon and the hôpital militaire du Val-de-Grâce, died recently, aged 48 years. He was born at Fort de France, Martinique, and became a hospital intern when only 19 years of age, a most exceptional occurrence. Although it was known for a long time that he was a bold and masterly operator, his gifts *did not* receive general acclaim until after he gave his services to his country. He worked at Val-de-Grâce, specializing in head and face wounds and prosthetic apparatus, and his results have commanded attention and admiration everywhere. His patience was inexhaustible, therefore he succeeded often in reconstructing the face and rendering existence bearable to many horribly disfigured soldiers.

Dr. Henry Barnsby, professor of clinical surgery in the Tours medical faculty, recently died there, aged 49 years.

Dr. André Chantemesse, professor of hygiene in the Paris medical faculty, died from influenza, aged 68 years. Born at Puy, Oct. 13, 1851, Chantemesse had a particularly rapid career. He became hospital intern in 1880; hospital physician in 1885; agrégé in 1889, and professor of hygiene in the Paris medical faculty in 1898. In 1901 he became a member of the Académie de médecine, section of public hygiene and forensic medicine, and in 1903 he was named inspector general of the Services sanitaires. He was a student of Pasteur, and was one of the first teachers of bacteriology. His researches were made along the lines of the application of bacteriology to hygiene. In March, 1897, in collaboration with Dr. Fernand Widal, Chantemesse discovered the typhoid bacillus in the water of a *borne fontaine* in the Ménilmontant quarter of Paris. Having succeeded in culturing the germ, he prepared an antityphoid serum, which was of great value during the war.

Among his publications may be mentioned his work on typhoid fever, flies and cholera, mosquitoes and yellow fever, written in collaboration with Dr. Borel, and "Frontières et prophylaxis."

Sanatorium de Bligny

The American Red Cross will assume the construction and maintenance of a new pavilion at the Bligny sanatorium (département de Seine-et-Oise). Two hundred tuberculous soldiers will be hospitalized there. At the opening ceremonies, Dr. Louis Mourier, undersecretary of state for the Service de santé militaire, paid tribute to the excellent services rendered by this sanatorium both before and during the war. He extended hearty thanks to our allies for the charitable aid given our sick soldiers. When the sanatorium will no longer be needed for military purposes, it will be at the disposal of the authorities of Paris and the vicinity for use as a hospital. A cure was obtained *in 67* per cent. of the cases treated.

Marriages

Roscoe Frederick Mauser, Lieut., M. C., U. S. Army, Fountain Springs, Pa., to Miss Jean Morrissey of Ashland, Pa., at Chattaroux, France, March 6.

Frank Nathaniel Evans, Lieut., M. C., U. S. Army, Springfield, Ill., to Miss Gertrude Maw of Essex, England, March 12.

Kenneth E. Lowman, Asst. Surg., Lieut., U. S. Navy, to Mlle. Myrtille Adele Fautrat, at Brest, France, January 11.

Dwight Henderson Murray, Syracuse, N. Y., to Miss Elizabeth Fletcher Mann, at Lyons, N. Y., March 22.

William H. Heinzmann to Mrs. Cordelia Clopton Hewlett, both of San Francisco, at San Jose, Calif., March 9.

Robert Fischelis, Philadelphia, to Miss Juanita C. Deer of Chicago, February 20.

Mark Jampolis to Miss Janet Hill McKenna, both of Chicago, March 1.

Deaths

Samuel Carrol Gibson, Reno, Nev.; Missouri Medical College, St. Louis, 1879; aged 61; at one time a member of the Nevada State Medical Association; superintendent of the Nevada State Hospital for Mental Diseases, Reno, from 1904 to 1911; physician of Washoe County; president of the Nevada State Board of Health since 1899; chief surgeon of the Nevada, California and Oregon Railroad since 1900; a director in the Farmers' and Merchants' National Bank, Reno; died in a hospital in San Francisco, March 11.

William Clarence Gates ⊕ Capt., M. C., U. S. Army, Bucyrus, Ohio; University of Michigan, Ann Arbor 1890; aged 50; for several years chief surgeon of the Calumet and Hecla Mining Company, Calumet, Mich.; founder of the Crawford Hospital, Bucyrus; who entered the military service, April 5, 1917, and was on duty at Camp Sherman, Chillicothe, Ohio, and then was sent overseas, and had been on duty at the base hospital in Vichy, France, for six months; died in that institution, February 21, from lobar pneumonia.

Abner Hugh Cook ⊕ Lieut., M. C., U. S. Army, Hot Springs, Ark.; Tulane University, New Orleans, 1910; aged 32; a specialist in internal medicine; on duty at Fort Oglethorpe, Ga., and later at Camp Sherman, Chillicothe, Ohio; formerly major and surgeon of the Fourth Infantry, Ark. N. G.; who was honorably discharged from the United States service, Dec. 17, 1918; died at his home, March 10, from pneumonia.

John Thomas Scott ⊕ Orrville, Ind.; Kentucky School of Medicine, Louisville, 1886; aged 55; secretary of the Stafford County (Kan.) Medical Society; formerly of Indianapolis; professor of obstetrics in the Central College of Physicians and Surgeons, Indianapolis, and consultant in obstetrics in the Indianapolis City Hospital and Dispensary; died at his home in Orrville, February 18, from pneumonia.

Alexander P. Fitch, Crawfordsville, Ind.; Washington University, Baltimore, 1871; aged 70; a member of the Indiana State Medical Association; formerly secretary of the Boone County (Ind.) Board of Health; assistant supreme medical examiner of the Order of Ben Hur; 1886 to 1889 in the United States Indian Service in South Dakota; died at his home, December 6, from angina pectoris.

George Amos Harman, Lancaster, Ohio; Medical College of Ohio, Cincinnati, 1871; Bellevue Hospital Medical College, 1874; aged 77; physician to the Ohio State Reform School, Lancaster, from 1874 to 1878; surgeon to the Sixth Battalion, Ohio State Militia, in 1875 and 1876; medical director of the Department of Ohio, G. A. R., in 1877 and 1888; died at his home, March 4, from heart disease.

William Robert Arlington Carley, Brooklyn; Bellevue Hospital Medical College, 1888; aged 55; a member of the Medical Society of the State of New York; a member of the staff of Bethany Deaconess, Bushwick Central, Long Island College, and Brooklyn hospitals; died in Long Island College Hospital, March 11, a week after an operation for the removal of an enlarged gland.

Osee Wallace Hoffman, Denver; Laura Woman's Medical College, Cincinnati, 1897; aged 43; assistant clinical professor of ophthalmology in the Denver and Gross College of Medicine, and chief of the eye and ear department of the Women's Free Dispensary, Denver; died in Mercy Hospital, Denver, March 5, from tuberculosis.

Alonzo H. Mackey, Gorin, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 60; a member of the Missouri State Medical Association; while driving in his automobile, March 7, over a grade crossing of the Sante Fe System, near Gorin, was struck by a freight train and instantly killed.

Jarvis Mitchell Howes ⊕ Sellersburg, Ind.; Kentucky University, Louisville, 1893; aged 57; for many years a druggist at Jeffersonville; while driving his automobile over a grade crossing of the Baltimore and Southwestern Railway, near Prather, March 5, was struck by a passenger train and almost instantly killed.

Charles W. Birdsall, Weavers, W. Va.; College of Physicians and Surgeons, Baltimore, 1885; aged 67; at one time a member of the Medical and Chirurgical Faculty of Maryland; died in the Davis Memorial Hospital, Elkins, W. Va., February 11, from pneumonia following influenza.

William Burt, Paris, Ont.; University of Toronto, Ont., 1870; aged 70; president of the Ontario Medical Association in 1905; and a member of the Ontario Board of Medical Examiners from 1889 to 1892; died at his home March 14, from pulmonary tuberculosis.

Wilford Wayne Martin ⊕ Lieut., M. C., U. S. Army, Kirksville, Mo.; Eclectic Medical University, Kansas City, Mo., *1903*; aged 41; on duty with the American Expeditionary Forces at Rouen, France; was thrown from his horse and instantly killed, December 4.

Homer Earl Gordon, Lansing, Mich.; Saginaw Valley Medical College, Saginaw, Mich., 1898; aged 64; at one time a member of the Michigan State Medical Society; for two years superintendent of schools of Tuscola County, Mich.; died at his home, March 4.

Alpha Mason Whiton, U. S. Indian Service, Fort Totten, N. D.; Hahnemann Medical College, Philadelphia, 1881; aged 61; on duty at the Indian School and Hospital at Fort Totten; died at that place, February 24, from pneumonia and angina pectoris.

Winfield March White ⊕ Lieut., M. C., U. S. Army, Sioux City, Iowa; State University of Iowa, Iowa City, 1912; aged 29; on duty with the American Expeditionary Forces in France; was killed in action, November 4, at Bazancourt Farm, France.

Harry Augustus Scheppach ⊕ Lieut., M. C., U. S. Army, Newark, N. J.; Bellevue Hospital Medical College, 1898; aged 43; on duty at the Yale Army Laboratory School, New Haven, Conn.; died in New Haven, January 29, from typhoid fever.

James H. Carter, Seymour, Ind.; University of Louisville, Ky., 1879; aged 70; at one time a member of the Indiana State Medical Association; secretary of the Seymour Board of Health; died at his home, March 10, from cerebral hemorrhage.

William James Bulgar ⊕ Oswego, N. Y.; Long Island College Hospital, Brooklyn, 1882; aged 61; consulting physician to the Oswego Hospital; collector of the port for four years; mayor of Oswego in 1893; died at his home, March 3.

John L. Caldwell, Waverly, Ohio; Cincinnati College of Medicine and Surgery, 1874; aged 75; a member of the Ohio State Medical Association; physician to the Pike County Children's Home; died at his home, March 7.

Arthur Lee Cunningham ⊕ Oakland, Calif.; Hahnemann Medical College, Pa., 1890; aged 52; chief surgeon to Fabiola Hospital, Oakland; at one time a member of the Oakland Board of Health; died at his home, March 3.

Ellenwood Bunker Coleman, Nantucket, Mass.; Chicago Homeopathic Medical College, 1888; aged 56; for three years representative from Nantucket in the state legislature; died at his home, February 27, from angina pectoris.

Ellsworth Hazen Noble ⊕ Elmira, N. Y.; New York Homeopathic Medical College, New York City, 1890; aged 53; a specialist on diseases of the eye, ear, nose and throat; died at his home, March 6, from acute gastritis.

John Vinson Brann, Knoxville, Iowa; Medical College of Ohio, Cincinnati, 1881; aged 65; local surgeon of the Rock Island System; at one time a member of the Iowa State Medical Society; died at his home, March 8.

Alexander Rhea Kuykendall, Dayton, Texas; Missouri Medical College, St. Louis, 1885; aged 59; a member of the State Medical Association of Texas; died in a sanatorium in Waco, Texas, February 17, from paresis.

Solomon Charles Mish, San Francisco; Kentucky School of Medicine, Louisville, 1892; aged 50; formerly professor of therapeutics in the West Coast Medical College in San *Francisco; died at his home, March 2.*

Charles Haight Holcombe ⊕ Lieut., M. C., U. S. Army, Trenton, N. J.; Jefferson Medical College, 1901; aged 51; a specialist in roentgenology; for several years a druggist of Trenton; died at his home, March 5.

Sarah Lamb Cushing, Lockport, N. Y.; Starling Medical College, Columbus, Ohio, 1859; aged 100; one of the first women to take up medical practice in the United States; died at her home, March 12.

William Crooks Hertzler ⊕ Toledo, Ohio; Jefferson Medical College, 1894; aged 54; died in his office, March 7, from an overdose of an opiate taken to relieve pain, following an operation on his nose.

Herman Vedder Mynderse ⊕ Schenectady and Scotia, N. Y.; Albany (N. Y.) Medical College, 1889; aged 57; attending physician to the Ellis Hospital Schenectady; died at his home, March 5.

⊕ Indicates "Fellow" of the American Medical Association.

Charles Olaf H. Nordwall ⊕ Rockford, Ill.; John A. Creighton Medical College, Omaha, 1906; aged 47; died in the Michael Reese Hospital, Chicago, March 7, from chronic interstitial nephritis.

Charles W. Hedrick, Willard, Ohio; Columbus (Ohio) Medical College, 1883; aged 55; for thirty-five years medical examiner for the Baltimore and Ohio System; died at his home, March 7.

Walton W. French, Chattanooga, Tenn.; New York Homeopathic Medical College, 1875; aged 83; a veteran of the Civil War; died at his home, February 24, from cancer of the face and neck.

Henry Crawford Walker, Hockessin, Del.; Jefferson Medical College, 1891; aged 64; for several years a druggist of Philadelphia; died at his home, March 2, from heart disease.

Frederick B. Palmer, Atlanta, Ga.; Southern Medical College, Atlanta, 1883; aged 80; a Confederate veteran; for many years a pharmacist of Atlanta; died at his home, March 13.

Henry Peffer, Summit, N. J.; New York University, New York City, 1883; aged 71; formerly a member of the staff of the Manhattan State Hospital; died at his home, March 8.

William Pugh Haynes, Clarksville, Tenn.; formerly of Oakwood, Tenn.; University of Tennessee, Nashville, 1894; aged 60; died at his home, February 26, from pneumonia.

George Loring Porter ⊕ Bridgeport, Conn.; Jefferson Medical College, 1862; aged 80; surgeon of U. S. Volunteers during the Civil War; died, February 17, in Stuart, Fla.

Robert Clemens Smedley, Denver; Denver College of Medicine, 1900; aged 47; at one time a member of the Colorado State Medical Society; died at his home, March 1.

Wiley B. Finney, Pelham, Ga.; University of Georgia, Augusta, 1891; aged 59; died at the home of his daughter near Ty Ty, Ga., February 4, from pneumonia.

John Henry Myers, Lewistown, Pa.; Baltimore Medical College, 1883; aged 78; a veteran of the Civil War; died at his home, March 6, from cerebral hemorrhage.

Joseph Levi Hogan ⊕ Oregon, Mo.; Ensworth Medical College, St. Joseph, Mo., 1909; aged 35; died in a hospital in St. Joseph, March 12, after a surgical operation.

John Manson, Lincoln, Calif.; University of Victoria College, Corburg, Ont., 1866; aged 80; a resident of California since 1869; died at his home, February 28.

Everett White ⊕ East Lynn, Mass.; College of Physicians and Surgeons, Baltimore, 1897; aged 48; died in Roxbury, Boston, February 27, from tuberculosis.

George W. Tepe ⊕ Evansville, Ind.; Hospital College of Medicine, Louisville, Ky., 1893; aged 47; died in Evansville, December 8, from surgical shock.

Jacob May, Bridgeport, Conn.; Rush Medical College, 1876; aged 68; a member of the Connecticut State Medical Society; died at his home, February 23.

Raymond B. Houston ⊕ Seneca, Kan.; Central Medical College of St. Joseph, Mo., 1905; aged 36; died at his home, February 10, from pneumonia.

Harrison M. Bennett, Takoma Park, Md., and Washington, D. C.; Howard University, Washington, D. C., 1882; aged 75; died at his home, February 26.

Ernest Freeman Norcross, Boston; Boston University School of Medicine, 1892; aged 67; died at his home, Dorchester, Boston, March 3.

Gustav C. Fichtner, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1887; aged 71; died at his home, March 12.

John C. Tillman, Sidney, Ohio; Medical College of Ohio, Cincinnati, 1877; aged 64; died in his apartment, March 2, from heart disease.

Robert Sidney Hendry, Taylor's Creek, Ga.; University of Georgia, Augusta, 1899; aged 49; died in a hospital in Savannah, February 10.

William A. Hubbard, Cedar Rapids, Iowa; Hahnemann Medical College, Chicago, 1885; aged 64; died at Battle Creek, Mich., March 11.

Edward Rawlins Tarry, Omaha; University of Maryland, Baltimore, 1893; aged 46; died at his home, March 7, from pneumonia.

Basil M. Webster, Council Bluffs, Iowa; Rush Medical College, 1869; aged 71; died at his home, March 6, from heart disease.

Thompson R. Brady, Wabash, Ind.; Rush Medical College, 1869; aged 75; died at his home, March 10.

Correspondence

CASE OF LETHARGIC ENCEPHALITIS

To the Editor:—With reference to the editorial in The Journal, March 15, on lethargic encephalitis, a brief report of a recent case under my observation may be of interest:

A woman, aged 40, married, mother of two children, in good health, was first seen by me, February 15, soon after she began to experience profound and constant drowsiness. Both levator palpebrae muscles were partially paralyzed, so that both lids remained half closed. Pulse, respiration, temperature and pupils were normal. In the earlier part of the attack, slight elevation of temperature—from 99 to 100—was occasionally noted. There was no photophobia and no pain. The urine was normal. There was no coma. The patient was easily aroused, but on one or two occasions she manifested temporary confusion of ideas.

Neither the patient nor any member of her immediate family has had influenza. A sister and her husband, living in an adjoining house, both had influenza, one early in October last and the other three months later, and influenza had prevailed here for five months preceding her illness.

No appreciable cause can be assigned for this attack, which continued, in gradually decreasing intensity, for one month, ending in recovery. During her confinement, she gained several pounds in weight.

Treatment consisted of rest in bed, a liberal diet, repeated cathartics, caffein freely, some quinin and, later, moderate doses of strychnin.

James B. Baird, M.D., Atlanta, Ga.

STANDARDIZATION OF DEGREES IN PUBLIC HEALTH

To the Editor:—In view of the importance of arriving at some measure of standardization for the various degrees and certificates offered in the field of public health, Yale University invited a group of representatives from neighboring universities to confer in regard to the matter at New Haven, Feb. 28, 1919. Johns Hopkins University was represented by Dr. W. H. Welch, the Massachusetts Institute of Technology by Prof. W. T. Sedgwick, Harvard University by Dr. M. J. Rosenau, New York University by Dr. W. H. Park, and the University of Pennsylvania by Dr. H. F. Smyth, while Yale University was represented by a special committee from the Graduate School, including Profs. S. E. Barney, L. B. Mendel, L. F. Rettger, M. C. Winternitz and C.-E. A. Winslow.

After very full discussion of the various points involved, the following resolutions were unanimously adopted:

1. That the degree of Doctor of Public Health (for which the abbreviation should be Dr.P.H.) for graduates in medicine should normally be awarded after two years of work done under academic direction, of which one year at least should be in residence and that the requirements for the degree should include class work, practical field work, and an essay based on individual study of a particular problem.

2. That the degree of Doctor of Philosophy or Doctor of Science in Public Health or Hygiene should be conferred on students who hold the bachelor's degree from a college or technical school of recognized standing, and have satisfactorily completed not less than three years of graduate study. It is understood that this degree is based on the fundamental sciences associated with hygiene and public health, including a knowledge of physics, chemistry, general biology, anatomy, physiology, physiologic chemistry, pathology and bacteriology, in addition to the thesis and other usual requirements for the Ph.D. or Sc.D. degree.

3. That the Certificate in Public Health should be granted for not less than one academic year of work to those who have received a bachelor's degree from a recognized college or technical school, or have satisfactorily completed two years of work in a recognized medical school, provided they have previously pursued satisfactory courses in physics, chemistry, general biology and general bacteriology.

tions are luted with melted petrolatum or paraffin, a drop of immersion oil is placed on the dark field condenser, and the slide is placed on it. Another drop of immersion oil is placed on the cover glass, and the oil immersion lens brought in contact with it. Details of the technic will vary with different operators. For a full dicussion of dark ground illumination, A. E. Wright's "Principles of Microscopy," New York, the Macmillan Company, Chapter XIV, may be consulted.

LITERATURE ON PYORRHEA ALVEOLARIS

To the Editor:—Will you kindly recommend a recent book on pyorrhea? I prefer a book that treats this subject exclusively.

Frederick Booth, LaPorte, Ind.

Answer.—The following books may be consulted:

Bass and Johns: Pyorrhea Alveolaris, Philadelphia, W. B. Saunders Company, $2.50.

Hecker: Pyorrhea Alveolaris, St. Louis, The C. V. Mosby Co., $2.

Talbot, E. D.: Interstitial Gingivitis and Pyorrhea Alveolaris, Toledo, Ransom and Randolph Co., $4.

Book Notices

Manual of Surgical Anatomy. Authorized by the Secretary of War and under the Supervision of the Surgeon-General and Council of National Defense. Prepared under the Direction of the Division of General Surgery in Collaboration with the Divisions of Orthopaedic Surgery, Surgery of the Head, Genito-Urinary Surgery and the Advisory Staff in Surgery in the Office of the Surgeon-General, U. S. Army. Cloth. Pp. 387, with illustrations. 1918.

This manual was prepared for the use of the medical departments of the Army and Navy. As its preparation was essentially a war measure, to use a trite phrase, it was not difficult to obtain the permission of various medical publishers for the reproduction of illustrations that appeared in their publications. The book is divided into four parts covering the divisions of the body, and the subjects have been presented in the following order: (*a*) transparencies or projections showing the deeper structures viewed in their natural positions as though the overlying structures were transparent; (*b*) systematic dissections; (*c*) regional dissections; (*d*) frontal, sagittal and transverse sections, and (*e*) surgical incisions. The international Basle nomenclature is used, and an explanatory index gives the equivalents for these terms. Most of the work was done in the department of anatomy of the University of Illinois. The compilers of the book have borrowed extensively from the best anatomic works available today in all modern languages, using freely those texts under Allied control and, at the same time, many German and Austrian textbooks. There are 327 pages of especially selected illustrations well printed on enamel paper. The result is an almost invaluable anatomic work. The civil sale of the manual is prohibited, its use being restricted to the Army and Navy. This is unfortunate, since the work would undoubtedly be of the greatest service to medical students. It is to be hoped that some arrangement may be made whereby at least several copies may find their way to the anatomic laboratories of our medical schools.

Forced Movements, Tropisms, and Animal Conduct. By Jacques Loeb, M.D., Ph.D., Sc.D., Member of the Rockefeller Institute for Medical Research. Cloth. Price, $2,50 net. Pp. 209, with 42 illustrations. Philadelphia: J. B. Lippincott Company, 1918.

The present volume is the first of a series of monographs on experimental biology to be written by American biologists under the general editorship of Jacques Loeb, T. H. Morgan and W. J. V. Osterhout. It embodies the author's conceptions respecting the nature of animal conduct. As many biologists are aware, animal conduct was explained by this author on the tropism theory some thirty years ago. In the course of years, many extensions have been made to this theory by himself and others. The book gives a brief but clear-cut summary of the entire subject as it stands today.

Not since the appearance of Descartes' treatise on man in the seventeenth century have such purely mechanistic ideas of animal conduct been so openly expressed as in this book. To be sure, Descartes constructed the machinery of the animal body and of man to suit his fancy, and endowed the latter with a soul to regulate its activity. In the last analysis, the machine of Descartes and that of Loeb are essentially the same. Both looked at the body as a whole so constructed that its every movement is the inevitable result of some form of stimulation. The seventeenth century philosopher deduced his conceptions of the body's activity from a consideration of a few anatomic facts and factitious assumptions; the modern experimentalist bases his convictions on a close quantitative study of the reactions of animals to light, galvanic currents, chemicals, heat, etc., to which animals are subjected. In the judgment of Loeb, the conduct of animals, including man, is nothing more nor less than the expression of tropistic reactions. To both the body represents merely a machine so constructed that its responses to a given stimulation are in most instances predictable. And whereas Loeb dispenses with a governing soul, Descartes defended his position in this respect with more wisdom, possibly, than conviction.

The lucid discussion of the various tropistic reactions prepares the ground for a discussion of instinct and memory images in the final two chapters of the book. In the former, dealing with instinct, the importance of sex hormones (particularly) are admitted to modify tropistic reactions. The discussion in the final chapter of memory images from a tropistic point of view is less complete and convincing. Data are lacking, as are methods for obtaining them. Learning, according to the author, presupposes associative memory, whose physical mechanism is again admittedly unknown. Nor is Loeb's position strengthened by stating that the conditioned reflexes or memory images of Pawlow are the cause of the variations and multiplication of possible tropistic reactions. The intangibleness of this memory image, and added special tropism, as a source of forced orientation fails absolutely to convince the verbalist, anthropomorphic author, or scientist; for when Loeb attempts to explain apparent free will of animals and man in the government of their actions by the tropistic effects of memory images, and the modification and inhibition of tropisms by memory images, both mechanists and vitalists will ask for his conceptions as to the physical or chemical nature of these memory images. His hypothesis as to the nature of so-called free will or premeditated acts is scientifically weak because it lacks data. Aside from this, the book contains much on animal conduct and its explanation that ought to be more generally known by biologists, and particularly by psychologists.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Arkansas: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

Colorado: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Florida (H): Jacksonville, April 8. Pres., Dr. Chas. W. Johnson, 33 E. Monroe St., Jacksonville.

Idaho: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

Minnesota: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Montana: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

Nevada: Carson City, May 5. Sec., Dr. S. L. Lee; Carson City.

New Mexico: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

Oklahoma: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

Rhode Island: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

Utah: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Medicolegal

Intent and Revocation of License in Abortion Case

(Rodermund v. State (Wis.), 168 N. W. R. 390)

The Supreme Court of Wisconsin, in affirming a judgment of conviction of defendant Rodermund of having used instruments in the treatment of a pregnant woman with intent to procure a miscarriage as denounced by the provisions of Section 4583 of the Wisconsin Statutes, says the defendant insisted that the trial court erred in submitting the question of his guilt or innocence to the jury, and asserted that the evidence did not sustain the charge preferred against him of having used instruments on the person of a pregnant woman with the intent to produce a miscarriage. The defendant testified in substance that he found the woman in process of miscarriage, that he rendered proper medical aid for such condition, that he did nothing to produce a miscarriage, that his treatment of her was for alleviating her serious condition and to protect her life, that he did nothing to prevent publicity of his connection with or treatment of her case aside from what proper professional conduct demanded of him in compliance with her wishes, that all of his professional services were rendered for the purpose of giving her proper medical care, and that he had no intent to do anything to procure a miscarriage. The proper inference from the evidence was necessarily dependent on the credibility and weight which was given to the statements of the various persons who testified. The case was therefore one wherein the jury and the trial court that saw the witnesses on the stand and observed them while testifying could much better ascertain the probative force of the evidence than could be ascertained by a review of the printed record. The facts and circumstances shown were as to their significance, and the inferences to be drawn therefrom as to the defendant's guilt or innocence were peculiarly within the function to be exercised by the triers of fact. The offense charged involved the inquiry: With what intent did the defendant give this woman the treatment he testified to? Such intent was a fact which must be ascertained from a consideration of the circumstances which threw light on the defendant's acts. If he had the felonious intent of producing a miscarriage, then guilt was established though he did not in fact procure a miscarriage.

The circuit court sentenced the defendant by the imposition of a fine and the costs of the action, and, in default of the payment of such fine and costs, committed him to the county jail for a period not to exceed six months. It also adjudged a revocation of the defendant's license to practice medicine and surgery, applying the provision of Section 1435 i of the statutes that:

> . . . If any person licensed or registered by said board shall be convicted of any crime, committed in the course of his professional conduct, the court in which such conviction is had shall in addition to any other punishment imposed pursuant to law revoke said license or certificate.

It was held in *State* v. *Lewis*, 164 Wis. 363, 159 N. W. 746, that the effect of this statute is simply to give, as an incident to such conviction, power to the court in the criminal proceeding to do directly and forthwith what might be done in subsequent civil proceedings. The supreme court is persuaded that this interpretation of the statute is correct, and hence the contention of the defendant that it provides additional criminal punishment and that it constitutes cruel and unusual punishment was without merit. The term "crime," as used in this provision, was manifestly employed to embrace the violation of any penal law of the state, and clearly includes all felonies and misdemeanors under the law of the state committed by the offender in the course of his professional conduct. The terms of the statute leave no room for different interpretation of the word "shall" in the provision that the court on record of conviction "shall" revoke the license or certificate of the person convicted. It is apparent that the legislature intended that a criminal conviction of any such licensed or registered person shall be deemed to be a conclusive test of unfitness to continue further in the practice of his profession, and made it mandatory on the court to revoke such license. This is properly a legislative question.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

Alabama State Medical Association, Mobile, April 15.
American Association of Anatomists, Pittsburgh, April 17-19.
American Physiological Society, Baltimore, April 24-26.
Arkansas Medical Society, Little Rock, May 20-22.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 21-23.
Georgia State Medical Association, Atlanta, April 17.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Louisiana State Medical Society, Shreveport, April 8-10.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
North Carolina State Medical Society, Pinehurst, April 15.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
South Carolina Medical Association, Florence, April 15-16.
Texas State Medical Association, Waco, May 13-15.

JOINT SESSION OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES AND THE FEDERATION OF STATE MEDICAL BOARDS

(Concluded from page 892)

The Desirability of Changing the Type of Written Examinations

Dr. George Blumer, Dean of Yale University School of Medicine, New Haven, Conn.: To be published in full in The Journal.

Advisability of Combining Examinations of the National Board, State Boards and Medical Schools

Dr. John S. Rodman, Secretary of the National Board of Medical Examiners, Philadelphia: During the past three years the National Board of Medical Examiners has sought to develop an ideal examination for determining the fitness of a candidate to practice medicine. In doing so the board has sought for principles to govern its future action rather than to examine large groups of applicants. As predicted by the founder of the board, the examination is adapted more to the exceptional than to the average applicant.

The board has tried to steer between technicality, on the one hand, and laxity, on the other. It has recognized the necessity of giving an examination sufficiently thorough to be recognized by state examining boards, and yet to make it of so practical a nature that a qualified candidate has a reasonable chance of passing it. Figures will show that the latter aim has been accomplished, since 80 per cent. of those who were qualified to enter the examination have received certificates. The board believes that the state boards' approval is being obtained. The board has endeavored to determine the fitness of a candidate to practice up-to-date medicine, rather than to pass on his special knowledge in any one specialty.

As time goes on, this board may be in a position to offer suggestions in regard to methods of teaching certain subjects.

The dean of one of our medical schools suggests that the examinations of the national board be combined with the final examinations of medical schools, the thought being that the national board's examination might be accepted by the school in lieu of its own final examination. After careful consideration, the board decided that while the plan had many merits, this was hardly the field which the national board had been created to enter. The final examination of a medical school, leading as it does to a degree, must be more or less academic in character, while that of the national board must determine the ability of the candidate, once having received the degree, to apply his knowledge to actual practice. Furthermore, the board requires a year of hospital work as intern after graduation, as a prerequisite to candidature for its examination.

DISCUSSION ON EXAMINATIONS

Dr. John M. Dodson, Chicago: It is extremely important and desirable that there should be some examination which could be taken by the young man entering the profession of medicine, which will insure him for all time the right to practice anywhere in this nation, without the distressing embarrassment of finding himself in middle life or later obliged to move from one state to another and to submit to a technical examination in branches from the study of which he has long been removed, and which acts as an effectual barrier against his transferring to another state.

Those of us who have had to do with administration of medical schools know in many instances of the hardships imposed by our impossible system of state licensure without reciprocity which have been forcibly brought to our minds. One of the worst features of reciprocity agreements has been the ridiculous "I will if you will" attitude of the various boards. About ten years ago, it was discovered that one state had examined one sixth of all physicians who in that year were licensed by reciprocity in the United States. Young men were taking examinations in that state because they were easy to pass, and were then obtaining their licenses by reciprocity in the states where they intended to practice. The other states put a stop to that practice by adopting a rule that no license would be granted by reciprocity to a practitioner of another state until he had practiced at least one year in the state where he secured his original license. The officials of the first board concerned were apparently very wrathful at this and came back with a ruling demanding two years of practice. In that state a young man could not get a license unless he had been practicing for two years in another state. About two months ago a graduate of Rush Medical College was offered a desirable position in a certain state with an industrial concern. He had been in practice about eighteen months. The board of the state to which he wanted to go first had the rule of one year, but it says that "we cannot accept a man unless he has been in practice for two years because the other state requires two years, but if that state will change its rule to one year we will admit this man." The other state stood pat, so the young man could not move to that state. He was willing to take the examination, but no examination was to be held for four months; hence he was debarred from accepting a desirable position because of this ridiculous attitude of a state board. This is one of many instances just as absurd which are working a serious and unjustifiable hardship on physicians.

I do not think we desire universal reciprocity. With the wide divergence of standards in the forty-eight states, we should not gain if we had universal reciprocity. I can see no solution of this difficulty except through some agency like the National Board of Medical Examiners, and its progress in the last two or three years in the direction of better examinations entirely commands my confidence. I hope to see the time when the acceptance of its certificate will be universal in this country, and when the earnest young men desirous of securing licenses can go anywhere at a minimal expense and with little trouble. I hope the board will find it possible to hold three or four simultaneous examinations in different cities, for that will be necessary if the students are to take them.

Dr. B. D. Harison, Detroit: It would be very foolish, when a candidate has a certificate from the National Board of Medical Examiners and goes into a state with the idea of practicing, for members of the state board to put him through the whole formula of passing another examination, when the examination he has already passed is more rigid and far superior to that which is provided by the state. I think other methods might be used in such cases; I am quite sure they can be, so that in effect the certificate of the national board should be recognized in all states. A number of states have already recognized it. I do not think any one would be sufficiently interested in a case of this kind to bring suit against the state board to prevent its recognition. There would be nothing in it for the man who prosecutes; he would not help himself or help anybody else.

The great weakness of the national board is its administration, particularly in the evaluation of credentials. If the board would use open methods of administration I think it would raise the standard to a very large extent. Very few of the state boards at present administer their preliminary requirements. They do not seem to know how. There is more care required in the administration of preliminary credits than in any other administration policy. It is a profession in itself, and there should be uniformity in administrative methods in regard to that. It would do a tremendous amount of good.

I had the privilege of attending the examination of the national board in New York a year ago, and I must say from my experience there that the examination was ideal. I do not know of any examination that is so thorough and yet so fair, and any graduate of a first class medical college should be able to pass this examination.

Dr. Isadore Dyer, New Orleans: The question of cooperation of the national board with the examinations of students graduating from medical schools, examinations for internships, and with state board examinations, is one that for some time in the future probably could not be made practicable. The purposes of the National Board of Medical Examiners should be reviewed. When created, it was intended to offer an examination which would be more or less academic, which should test the exceptionally qualified candidate, and which should certify him, if found qualified, to any one who might be concerned. The board demanded graduation from an acceptable high school; two years of college work which would include the sciences required by the Council on Medical Education in its published requirements; graduation from a Class A school, and an internship in an acceptable hospital. It has not been the board's function to consider any other examination. The board is interested in the general problem of medical education. It has assumed no attitude of leading in the problems which are before this body, but desires to have a part in the consideration of the problems that are arising. The state boards have not yet standardized their own examinations; not all of the states have yet come into the membership of the Federation of State Boards. It would be a presumption on the part of the National Board of Medical Examiners to hold an examination qualifying for a state board unless the initiative in this regard came from that board.

Dr. Thomas McDavitt, St. Paul: I have had the great pleasure of being present at three examinations of the national board, and they impressed me very favorably. It was unfortunate, so far as the national board is concerned, that it could not be legalized by the national government. Could that have been done, every state would have accepted its certificates. I think its examinations are more difficult than any I have ever attended. No state board has an examination that compares with it. Unfortunately our law in Minnesota was so stringent as regards its verbiage that we could not accept the examination of the national board; but we have bills in both houses of the legislature at present providing for an amendment to our law, whereby we shall be enabled to accept the examinations of the national board on the same basis that we accept those of other states in the matter of reciprocity.

W. C. Rucker, Major, M. C., U. S. Army, Newport News, Va.: In examining a man we should bear in mind what we are examining him for. If it is to find out whether he is a scientist, he should be given one type of examination. If it is to find out whether he can treat sick people, you must give him another type of examination. There is one thing however, which he is not examined in, and that is his temperamental fitness to practice medicine. We should determine a man's ability to meet an emergency. Almost any one can examine a patient, go home and read up on the subject, find out what to do and blunder along, but it takes a good man to meet an emergency. The United State Public Health

Service a few years ago undertook to put into practice a test more or less psychologic which would in a measure determine the temperamental fitness of men, and it was surprising to see the number of men who were found unfit.

Dr. James Ewing, New York: I had the opportunity to see some of the examinations conducted by the national board in New York, and I can say that the experience of passing through such an examination is a liberal education in itself. I think this board is doing much toward maintaining and even raising the standard of medical education in this country. Its theoretical conception, its philosophy, is entirely sound. Up to the time of the war in Europe, it is a fact that the medical schools provided a very considerable number of men who entered the other sciences and became prominent in them; but in this country the medical schools did not provide enough men to teach the sciences to medical students. There are few prominent teachers of anatomy in this country who hold medical degrees. Some of them have honorary degrees. The same situation exists with regard to physiology. Medical schools have not provided sufficient men to teach their own students the fundamental sciences of medicine.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1919, **17**, No. 3

*Epidemic Influenza in Infants. M. Wollstein and A. Goldbloom, New York City.—p. 165.

*Unusual Case of Aplastic Anemia. L. W. Smith, Boston.—p. 174.

*Relation of Parental Nativity to Infant Mortality in New York State. P. R. Eastman, Albany.—p. 195.

*Simple Method of Modifying Fat Content of Milk for Infant Feeding. A. L. Daniels and H. English, Madison, Wis.—p. 212.

Influenza in Infants.—This paper is based on studies made by Wollstein and Goldbloom at the Babies' Hospital of the City of New York. Of thirty-six children who had bronchopneumonia and influenza, twelve recovered and twenty-four died, a mortality rate of 66.6 per cent. Of the twenty-four fatal cases, eighteen came to necropsy. These eighteen cases showed a variety of pulmonary lesions making a characteristic picture of congestion, edema, general bronchitis, scattered pneumonia lesions differing in age, but involving two or more lobes; subpleural hemorrhages and pleural exudate. Capillary hemorrhages in the other viscera were constant. The influenza bacillus was grown from every case, but not alone. Pneumococcus Type IV was the most frequent bacterium associated with it. During life the sputum contained *B. influenzae* in thirteen of seventeen cases in which it was searched for. This series of pneumonias was far more severe, more extensive and more highly fatal than was any other group of pneumonia cases observed in the hospital over a similar period of time.

Aplastic Anemia.—The clinical history of Smith's case can be summed up briefly as follows: A boy of 6 who had been apparently well up to the time of the present illness, with the exception of measles eight months previously, came into the hospital with a history of only two weeks illness, with no definite symptoms. The clinical picture and the laboratory findings were roughly those of rather a severe secondary anemia, cause unknown. There had been no history of hemorrhage, or of any more recent infection than the measles. He responded temporarily to iron treatment, but soon became more anemic and progressed rapidly downhill to fatal exitus. There were very slight purpuric manifestations, and an unexplained swelling of the face, accompanied by high fever. The blood picture at first suggestive of secondary anemia, became more definitely that of an aplastic anemia. The degree of anemia was extreme—hemoglobin, 40 per cent.; red count, 1,500,000. The differential white count showed a beginning relative lymphocytosis and a drop in the leukocytic proportion; a good deal of poikilocytosis, anisocytosis and polychromatophilia. Three months after the boy was first seen, the red cells numbered 700,000, hemoglobin, 18 per cent.; an obvious relative lymphocytosis. The immediate cause of death was a failing circulation with dilatation of the heart, accompanied by decompensation. The edema of the lungs was partially responsible as well. At the necropsy there was found an extreme marrow aplasia. The malpighian corpuscles in the spleen gave very definite evidence of prolonged toxic action such as is seen especially in diphtheria, or in any of the prolonged febrile diseases. It is frequently concomitant with measles. Smith is convinced that this is, perhaps, the most obvious answer to the whole story—the prolonged toxic action of the toxin of measles, acting in a cumulative sort of fashion, until the marrow became exhausted.

Parental Nativity and Infant Mortality.—The statistics given by Eastman are taken from the records of the New York State Department of Health in which New York City is not included. It is evident that the several causes culminating in the present high mortality of infants are strongly influenced by the customs and racial characteristics of the various peoples inhabiting the state. Among the foreign born, and particularly the Italians and Slavic races, the principal diseases are those here classed as communicable, respiratory and gastro-intestinal. The superior environment and intelligence of the average native woman is reflected in the comparatively low mortality of her babies from these diseases. The fewer deaths from prematurity and congenital defects among children of Italian, Russian, Polish and Austro-Hungarian parents may possibly be accounted for, in part, by the greater vitality and superior constitution of these infants. If this is true, there is the more reason to deplore the excessive mortality incident to them during the later months of infancy, since it would seem that if it were not for the ignorance of the parents, they actually start life with a better chance of survival then do other children. Compared with the foreign born, the death rate from prenatal causes is exceptionally high among the children of native mothers. On the other hand, in a community composed largely of Italians or Slavs, the principal causes to be combated are those arising from poverty, ignorance, overcrowding and imperfect sanitation.

Modifying Fat Content of Milk.—The method used by Daniels and English consists in allowing the milk to stand on ice until the cream line is distinct—about ten or twelve hours. The cream is then carefully removed, so that as little mixing as possible takes place. For this purpose a Walker-Gordon dipper with a removable bottom has been found most convenient. In order to obtain milk containing 2 per cent. fat, 2 ounces, or 54 c.c., of the removed cream should be added to 24 ounces of the skimmed milk; for a 3 per cent. milk 4 ounces, or 108 c.c., should be returned to 24 ounces of the skimmed milk, and for a 4 per cent. milk 6 ounces, or 162 c.c., should be added. The length of time the milk has stood after boiling is of considerable importance in securing good results with the method, for milk which has stood a too short period contains a varying amount of fat in the skimmed portion.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

March, 1919, **79**, No. 495

Importance of Diagnosis in Pelvic and Abdominal Surgery and Some of the More Common Errors. E. E. Montgomery, Philadelphia.—p. 321.

*Control of Nausea and Vomiting of Pregnancy by Intramuscular Injections of Corpus Luteum Extract. J. C. Hirst, Philadelphia.—p. 327.

Analysis of 262 Operated Cases of Uterine Myomata. L. Broun, New York City.—p. 333.

Technic for Separating Sigmoid and Uterine Adnexa Fused by Inflammation. H. Grad, New York City.—p. 344.

Contraindication to Use of Hydrostatic Bags in Obstetrics. E. T. Hull, New York City.—p. 356.

Gynecologic Obstetric Personnel in Semiprivate Hospital. E. Bishop, Brooklyn.—p. 361.

Cesarean Section: Indications and Limitations in Obstetrics. E. A. Schumann, Philadelphia.—p. 371.

The "Grad Knot": Surgical Self-Compression Knot. H. Grad, New York City.—p. 379.

Control of Nausea and Vomiting of Pregnancy.—In a series of 111 consecutive, unselected cases treated by Hirst with corpus luteum extract 99 (89.2 per cent.) were influenced favorably, showing, in his opinion, that the lack of the normal corpus luteum extract absorption is a factor in the nausea of pregnancy, and that in the great majority of cases the nausea can be relieved by the hypodermic intramuscular injection of corpus luteum extract.

American Review of Tuberculosis, Baltimore

October, 1918, 2, No. 8

Psychologic Handling of Tuberculous Patient. C. L. Minor, Asheville, S. C.—p. 459.
Influence of Psychic Acts on Progress of Pulmonary Tuberculosis. T. Ishigami, Osaka, Japan.—p. 470.
*Induced Pneumothorax Treatment of Pulmonary Tuberculosis. E. Morris, Oak Forest, Ill.—p. 485.
*Artificial Pneumothorax and Pregnancy. S. A. Slater, Oil City, Pa. —p. 497.
*Artificial Pneumothorax in Tuberculous Pneumonia. H. E. Gammons, Deerwood, Minn.—p. 501.

Induced Pneumothorax Treatment of Pulmonary Tuberculosis.—Morris reports on this treatment as used in the Cook County Tuberculosis Hospital in 202 cases. They have used only the Murphy outfit, with some changes necessitated by the use of atmospheric air instead of nitrogen gas. Instead of using the atmosphere in the room, a long rubber tube is connected at one end with the intake valve of an ordinary aspirating pump and at the other with a metallic bathroom spray loosely fitted with sterile cotton. This end is placed in the outside air, which is then pumped through a bottle of sterile cotton into one filled with a 1 : 1,000 mercuric chlorid solution, and from this into the inverted cylinder surrounded by boiling water. The needles used are made by filing the end of an 18 gage aspirating needle to an angle of 45 degrees. There is also a nick filed into the needle about one-sixteenth inch from the end. Very good results have been obtained with this outfit.

Artificial Pneumothorax and Pregnancy. — The woman whose case Slater reports has been pregnant twice since pneumothorax treatment was begun. The first pregnancy ended in abortion at three months. The second ended at full term in normal labor without any interruption of the pneumothorax treatment.

Artificial Pneumothorax in Tuberculous Pneumonia. — Gammons suggests that this method of treatment should be used more often in these acute tuberculous infections.

Annals of Surgery, Philadelphia

February, 1919, 69, No. 2

*Studies in Bone Transplantations: Method of Increasing Osteogenetic Power of Free Bone Transplant. B. Brooks, St. Louis.—p. 113.
*Advantages of Picric Acid over Tincture of Iodin for Disinfection of Skin. C. L. Gibson, New York.—p. 127.
Postoperative Parotitis. J. B. Deaver, Philadelphia.—p. 128.
Frequency of "Strawberry" Gall Bladders. W. C. MacCarty, Rochester, Minn.—p. 131.
*Frequency of Adenomyoma of Uterus. W. C. MacCarty and R. H. Blackman, Rochester, Minn.—p. 135.
Abdominal Drainage. F. Le M. Hupp, Wheeling, W. Va.—p. 138.
*Fractures of Upper End of Humerus. J. H. Stevens, Boston.—p. 147.
Use and Value of Lane Plate. A. H. Harrigan, New York City. —p. 161.

Method of Increasing Osteogenetic Power of Free Bone Transplant.—The object of the experiments described by Brooks was to test the value of a method of increasing the osteogenetic power of the autogenous bone transplant, in order that a defect in the shaft of a bone of an old subject could be bridged by a free bone transplant with a better prospect of ultimate successful regeneration of the defect. Beginning on the fourteenth day after the second operation, the animals used were given intraperitoneal injections of 3 c.c. of a 5 per cent. solution of sodium alizarin sulphonate twice each week until the end of the experiments. The animals were sacrificed at the end of the periods of 23 to 173 days after the second operation, and the bones of the extremities removed for study. The use of the vital stain made it possible to determine the site and amount of all new bone formed from the transplants.

These experiments show a relatively large proportion of instances in which the ordinary bone transplant with periosteum and endosteum failed to regenerate a bone defect when the transplantations were made in animals which were not young. The experiments also show that transplants of growing bone result in a much larger proportion of successes than the normal bone transplants. The success or failure of a bone transplant obviously must be determined by both internal and external factors. The latent power of the osteoblasts to multiply and produce bone is an internal factor and would seem to depend on the intrinsic latent power or regeneration of the bone from which the transplant is taken. The adequate supply of nutrition for growth of the bone-producing cells must come from the bed into which the transplant is placed and is an external factor.

Whether the failure of a relatively large proportion of free bone transplants in old animals is the result of internal or external factors is not clear. It would seem most probable, however, that it was the result of the low intrinsic osteogenetic power of the bones in advanced life. It is also not clear from these experiments whether the growing bone transplant is successful in a larger proportion of instances than the normal bone transplant, because it contains cells with greater power of growth or because the growing tissue with its numerous thin-walled vessels and tissue spaces more readily acquires nutrition from the bed in which the transplant is placed. It would seem more likely that the latter is true. If this is so, then the transplant would possibly succeed in even a larger proportion of instances if the bed into which the transplant is to be placed were also stimulated to grow by previous operative procedure. These experiments show that when there is nonunion of fractured fragments in spite of good approximation of the fragments, the failure of the fracture to unite must be the result of poor regenerative power in bone.

In these experiments, in which only dogs well advanced in life were used, and in which the bones showed power of regeneration less than that in young animals, the conditions were comparable to those existing in clinical cases of nonunion of fracture as a results of poor regenerative power in the bones. The method of using transplants of growing bone resulted in a much larger proportion of successful results than those following the use of normal bone transplants. These experiments also showed that a defect in the bone of an old animal can be successfully repaired by bridging the defect with a homogenous transplant of bone taken from a young animal. In these experiments the growing bone transplants have been transplanted seven to twety-nine days after stimulating growth.

Advantages of Picric Acid Over Tincture of Iodin.—Gibson uses a 5 per cent. alcoholic solution of picric acid as a substitute for tincture of iodin. He has not seen any cases of irritation of the skin. The method has for some time been the routine mode of disinfection of the skin in the British armies.

Frequency of Adenomyoma of Uterus.—Between 1906 and 1918 (October 1) 3,388 fibromyomatous uteri were removed in the Mayo clinic. Two hundsed and eleven (6.43 per cent.) of these contained adenomyomas. In 5 cases the tumor was in the fallopian tubes. The last 109 cases of the series were studied by MacCarty and Blackman with reference to certain clinical features which might be associated intimately with the condition. Ninety-five patients (86 per cent.) were married; 41 per cent. gave histories of having had miscarriages; 50 per cent. suffered from profuse and prolonged uterine bleeding, and 31 per cent. from irregular bleeding. The average age of puberty was 14.3 years. Sixty-five per cent. of the married women had borne living children. In 5.5 per cent. of the cases epithelioma of the cervix or carcinoma of the body of the uterus was associated, neither of which conditions bore any apparent relationship to the adenomyomas. In 72 per cent. other pathologic pelvic conditions were associated, such as ovarian cysts, chronic or acute salpingitis, uterine or cervical polypi, cystic cervicitis or prolapsus uteri. In no case without the association of a malignant condition was the clinical diagnosis one of malignancy. In no case was a positive clinical diagnosis of adenomyoma made previous to operation. The clinical diagnosis was clothed in such terms as fibromyoma or pelvic tumor, both of which diagnoses show recognition of definite pathologic conditions of a neoplastic nature without attempting to specify in terms of detailed pathology.

Fracture of Upper End of Humerus.—Fractures of the upper end of the humerus, i. e., above the insertion of the pectoralis major muscle, according to Stevens, will in nearly all cases conform to three types and their subdivisions. Stevens insists that all should be treated in abduction and external rotation with traction varying from a few days in mild cases to twelve days in complicated ones. Passive motion must be begun early and active motion must follow very quickly if we are to prevent the tendency to restriction of motion. It must be used always with care and with due regard to the anatomy and pathology. In the mild cases it is safe to begin very early since there is little tendency toward displacement. A right-angled wooden splint in the severe cases and a firm pillow splint in the mild cases always with traction is the ideal method of treatment. External rotation in abduction as a treatment is almost an impossibility of accomplishment unless the patient remains in bed. In bed it is the simplest method and not an uncomfortable position for the patient.

Boston Medical and Surgical Journal, Boston

March 13, 1919, **180**, No. 2

Surgery in Cancer. S. W. Little, Rochester, N. Y.—p. 293.
Method of Making Iodo-Tannin-Glycerin Complex. C. J. Enebuske, Cambridge, Mass.—p. 300.
*Record of Fractures Among 10,287 Men Discharged from the Army During November, December and Part of January, 1918 and 1919. I. W. Brewer, Camp Humphreys, Va.—p. 304.
Pneumonia and Empyema. H. Gray, Boston (to be continued).—p. 305.

Fracture Among Men Discharged from Army.—A total of 665 fractures were noted by Brewer among these 10,287 men, making a rate of 64.7 per thousand. In this group 15.2 per cent. of the fractures were of the humerus; 14.8 per cent. were Colles' fractures; 10.9 per cent. were fractures of the phalanges; 8.8 per cent. were fractures of the clavicle; 8.2 per cent. were fractures of the tibia; 7.7 per cent. were fractures of the femur, and 6.0 per cent. were Pott's fractures. Among the rarer fractures were fractures of the malar bone 1, two cases of fracture of the pelvis, and one case of fracture of a vertebra.

California State Journal of Medicine, San Francisco

March, 1919, **17**, No. 3

Bureau of Child Hygiene. L. B. Deal, San Francisco.—p. 74.
Study of Achylia Gastrica by Fractional Method. E. C. Fishbaugh, Los Angeles.—p. 74.
*Hereditary Hemorrhagic Telangiectases. F. F. Gundrum, Sacramento.—p. 78.
Electricity Applied in Gynecology. O. McNeile, Los Angeles.—p. 78.
Some Interesting Surgical Conditions of Kidney and Prostate. W. E. Stevens, San Francisco.—p. 82.

Hereditary Hemorrhagic Telangiectases.—Gundrum reports four cases of this disease occurring in three generations of one family. The lesions were present on the tongue, septum nasi, cheek, ears, eyelids, and face, and each patient was also liable to severe nasal hemorrhage.

Journal of Bacteriology, Baltimore

January, 1919, **4**, No. 1

Relation of B. Botulinus to Forage Poisoning or Cerebrospinal Meningitis in Horses. R. Graham and A. L. Brueckner, Kentucky Agricultural Experiment Station.—p. 1.
*Aerobic Spore-Bearing Bacteria in Intestinal Tract of Children. M. D. Batchelor, Baltimore.—p. 23.
*Non Lactose Fermenting Bacteria from Polluted Wells and Sub-Soil. I. J. Kligler, New York City.—p. 35.
Intensive Nitrite Formation in Solution. A. Bonazzi, Wooster, Ohio.—p. 43.
Bacterial Flora of Mouth and Nose of Normal Horses. E. H. Boyer, Columbus, Ohio.—p. 61.
I. Gas Production by Bact. Pullorum. II. Bact. Pullorum Infections in Adult Birds. III. Relation Between Sucrose-Fermentation and Immunizing Power by B. Avisepticus. P. Hadley, D. W. Caldwell and B. M. Heagh, Rhode Island State College.—p. 65.

Aerobic Spore-Bearing Bacteria in Children.—A bacterial investigation of the dejecta of 74 children was made by Batchelor with the special object of isolating the aerobic spore-bearers. The findings were as follows: *B. cereus,* 32 cases; *B. albolactus,* 17 cases; *B. pseudotetanus,* 9 cases; *B. mesentericus,* and *B. subtilis,* each 6 cases; *B. petasites* and *B. vulgatus,* each 2 cases.

Bacteria from Polluted Water.—Nonlactose fermenting, nonliquefying bacteria were obtained by Kligler from 15 polluted wells and 14 contaminated subsoil samples. In but one instance were members of this group obtained from both the well and soil of the same premises, but even in this case the organisms possessed different biologic and serologic characters. The former belonged to the gas producing paraenteritidis group most common in the intestinal tract of swine, cattle, and other domestic animals. The latter, on the other hand, was a nongas-producing form resembling the bacillus found by Morgan, Lewis and others in the stools of normal individuals, as well as in those of people suffering from diarrhea. Kligler believes that a careful study of the nonlactose fermenting bacilli commonly found in the intestinal tracts of man and domestic animals might furnish the basis for an index of the source of pollution.

Journal of Infectious Diseases, Chicago

March, 1919, **24**, No. 1

*Perfusion Experiment in Study of Cellular Anaphylaxis. W. P. Larson and E. T. Bell, Minneapolis.—p. 180.
*Chlorinated Lime and Halazone in Disinfection of Drinking Water. B. Fantus, Chicago.
*Antigens Used in Wassermann Reaction. E. H. Ruediger, Bismarck, N. D.—p. 204.
*Droplet Infection and Prevention by Face Mask. G. H. Weaver, Chicago.—p. 218.
*Connection of Milksickness with Poisonous Qualities of White Snake Root (Eupatorium Urticaefolium). W. G. Sackett, Chicago.—p. 231.
Growth of B. Coli. R. C. Salter, Ames, Ia.—p. 260.
*Function of Fats in Immune Processes, Pneumococcus and Streptococcus Immunity. C. C. Warden, Ann Arbor.—p. 285.
Formation of Conglutination Thrombi in Liver of Dogs After Injection of Witte's Peptone. J. P. Simonds, Chicago.—p. 297.

Study of Cellular Anaphylaxis.—In studying spontaneous phagocytosis in the liver with India ink the authors found that the ink particles were deposited only in restricted areas of the organ. It was evident that only a small part of the liver was traversed by the perfusing fluid. This observation suggested the possibility of making use of this procedure in studying the course of the perfusing fluid through an organ and in determining to what extent it is possible to wash an organ free of blood. All perfusions, whether of liver, lung, or uterus, give about the same results. It was never possible to wash out all the blood and albumin. The fluid from the exit cannula soon becomes free of albumin and blood, but if the perfusion is discontinued for a few minutes both these substances reappear. By perfusing organs with Locke's solution containing India ink, thus marking the course taken by the fluid through the organ, it was found that a surprisingly small part of the capillary system is really washed out by the perfusing fluid. This technic does not, therefore, remove circulating antibodies completely, as has been assumed, and this type of experiment does not establish the presence of cellular antibodies.

Disinfection of Drinking Water.—Fantus' work was done for the purpose of comparing the disinfectant value of halazone with that of chlorinated lime. He claims that chlorinated lime is a more efficient water disinfectant than halazone, compared on the basis of active chlorin. It is also a great deal cheaper. Hence, there is no reason for employing halazone in water disinfection, except when its superior tablet-making qualities render its use advantageous. Halazone is a better agent for the preparation of water disinfecting tablets. Its action is, however, a rather slow one.

Antigens in Wassermann Reaction.—In the tests reported by Ruediger, made on the serum of fifty supposedly nonsyphilitic persons and thirteen known syphilitics, six different antigens were used. With the serums from fifty clinically nonsyphilitic persons, alcoholic extract of human heart, alcoholic extract of beef heart and alcoholic extract of rabbit heart gave negative results. Alcoholic extract of dog heart gave positive results with sixteen, or 32 per cent., and alcoholic extract of guinea-pig heart gave positive results with seventeen, or 34 per cent. As no other signs or symptoms of syphilis could be discovered, these were considered false positive results, and, therefore, heart of dog and of guinea-pig are considered unsuitable for the preparation of so-called antigen to be used in the Wassermann reaction. Whenever alcoholic extract of dog heart gave a positive result, the alcoholic extract of guinea-pig heart also gave a positive result; the latter usually reacted somewhat stronger then did the former. With serum from known syphilitics, the alcoholic extract of beef heart and the alcoholic extract of rabbit heart frequently gave stronger positive results than did the alcoholic extract of human heart. The results obtained with alcoholic extracts of dog heart and guinea-pig heart corresponded to those obtained with alcoholic extract of human heart, while the alcoholic extract of sheep heart reacted weaker. When antigen was added fifteen minutes after the complement the same results were obtained as when antigen was added fifteen minutes before the complement. Antigen dilutions of 1:35, 1:45, 1:50 and 1:75 gave results that were identical with those given by a dilution of 1:25. Dilutions of 1:100, 1:200 and 1:300 gave irregular results, sometimes stronger, sometimes identical with and other times weaker than those given by a dilution of 1:25. Dilutions higher than 1:300 usually gave weaker positive results than did the dilution of 1:25.

Prevention of Droplet Infection by Face Mask.—Since June 1, 1916, gauze masks have been used by the nurses of the Durand Hospital. No case of scarlet fever has occurred since masks have been worn. The nurses are instructed to change the mask as soon as it has been known to be grossly contaminated, and never to put the hands to the mask to adjust it, etc., until the hands have been washed thoroughly. Early in 1918, bacteriologic tests showed that the masks then in use did not remove all the bacteria thrown out in the mouth spray. The masks consisted of two layers of gauze, 28 by 24 mesh, but as they were worn but once before washing and resterilizing, shrinkage soon made the openings in the gauze much closer than they were in the new masks.

Experiments made by Weaver demonstrated that gauze will remove bacteria from the air when carried in a moist spray. The efficiency of the gauze as a filter is in direct ratio to the fineness of the mesh and the number of layers used. Furthermore, it was noted that when the subject coughed with mouth wide open few bacteria were driven out, but that an explosive cough with the lips held quite close yielded quite a rich bacterial spray. The coarser gauze allowed a large proportion of the bacteria to pass through, even when six layers were superimposed. The finer gauzes removed many more of the bacteria, and when six and eight layers were used almost all the bacteria failed to pass through. The test was rather severe, as the force used was greater than that made in any spontaneous expiratory effort. Similar results were obtained when the pharynx and tongue had been smeared with a culture of *B. prodigiosus* shortly before the experiments were carried out. There appeared no appreciable difference between dry and moist gauze filtering properties. Since the completion of these studies the masks used in the Durand Hospital have been made of three layers of gauze with a mesh of 44 by 40. The nurses are instructed to wear two superimposed masks, making six layers of gauze, when caring for cases of virulent infections, when secretions are abundant. The gauze used is absorbent.

The experience with masks has been confined principally to their use to protect attendants on the sick from infection. They have been used not only by nurses, but by physicians in their work while taking cultures from throats, doing intubations and examining chests. Masks have also been placed over the faces of mothers while nursing their babies when either one has been infected by diphtheria or has been a diphtheria carrier. There has been considerable reduction in cases of rhinitis, tonsillitis, and pharyngitis among the nurses since masks have been worn. Weaver cautions that endeavors to limit droplet infections should not prevent equally energetic efforts to close other channels of spread of infectious materials.

Milk Sickness and White Snake Root.—Sackett's investigations show that trembles or milk sickness may be due to the ingestion of the toxic substance present in Eupatorium leaves.

Fats in Immune Processes.—The work discussed by Warden in this paper is a continuation of earlier work (abstracted in The Journal, Jan. 4, 1919, p. 71) in which it was shown that the fats peculiar to certain bacteria and other cells constitute their specific antigens, as shown by complement fixation antibody production in animals inoculated with the antigens, and by a new specific precipitation reaction in vitro between the fat antigens and their appropriate serum antibodies. This paper deals with the quantity of antibody produced in rabbits from inoculations with the pneumococcus and the streptococcus fat antigens and the amount of protection afforded against the organisms.

The facts brought out in this work on the functions of antigenic fats in immunity lead Warden to believe that such antigens are destined to play an important part not only in active immunization of animals and man as prophylactic measure, but also in the treatment of infections. They have to commend them their purity, the dosage by weight, the absence of toxicity, the ease and safety of either subcutaneous or intravenous injection. This form of treatment would appear to be particularly applicable to the types of infections of acute and often fatal character and of brief duration when antibody production is invariably slight or absent altogether, and where toxemia is the dominant symptom, such types being represented by pneumococcus, streptococcus and meningococcus infections. In infections also of a more prolonged course, such as typhoid and paratyphoid fevers, even when antibody is known to be present in the serum, as shown by agglutination tests, at the same time with the antigenic micro-organism, the fat antigen would be presumed to be beneficial both by increasing the antibody production and by furnishing a nidus round which the antigen-antibody aggregate might form and lead to the absorption of complement.

Laryngoscope, St. Louis

February, 1919, **29**, No. 2

Medical Studies on "Feel of the Airship." Deaf Mutes and Normals. E. R. Lewis and H. Horn, M. C., U. S. A.—p. 65.

Injuries of Auditory Canal Resulting from Projectiles. F. E. Cutler, Cleveland.—p. 82.

Occasional Preference of Tracheotomic Bronchoscopy to Per-Oral Route. St. C. Thomson, London, Eng.—p. 88.

Case of Bilateral Acute Suppurative Otitis Media with Symptoms of Thrombosis. O. D. Stickney, Atlantic City.—p. 90.

New Instrument for Tonsillecotmy. H. L. Baum, Denver.—p. 96.

Case of Fatal Epistaxis Following Varicella. C. C. Jones, Cincinnati.—p. 101.

Nasal and Pharyngeal Sequelae of Influenza. E. A. Laessle, Philadelphia.—p. 103.

Removal of Foreign Bodies from Bronchi and Esophagus. J. W. Murphy, Cincinnati.—p. 107.

Medical Record, New York

March 15, 1919, **95**, No. 11

Therapeutic Suggestion Concerning Endocrines. S. W. Bandler, New York City.—p. 429.

Tuberculous Bacteriemia and Massive Exogenous Tuberculous Infection in Man. G. E. Bushnell, Washington, D. C.—p. 432.

Tumors of Blood. E. H. P. Ward, White Plains, N. Y.—p. 434.

Etiology and Treatment of Influenza. O. Paget, Weymouth, England.—p. 436.

Seborrheic Eczema of Lower Lip with Deep Central Cracking. D. W. Montgomery and G. D. Culver, San Francisco.—p. 438.

Minnesota Medicine, St. Paul

March, 1919, **2**, No. 3

*Atypical Clinical Types of Tuberculosis (Concealed). G. D. Head, Minneapolis.—p. 79.

*Treatment of Menorrhagia with Radium. L. J. Stacy, Rochester.—p. 88.

Smallpox in Minnesota. A. J. Chesley, St. Paul.—p. 92.

Carrel-Dakin Treatment of Empyema. F. J. Savage, St. Paul.—p. 95.

Technic of Radium Application. D. T. Quigley, Omaha, Neb.—p. 97.

Atypical Clinical Types of Tuberculosis.—While admitting that tubercle bacilli may lodge in the human body and produce lesions without causing abnormal sensations which will attract the attention of the host, Head firmly believes, however, from a considerable experience, that these cases are rare, and that if all persons infected could be kept under skilled observation, the disease would make itself manifest in the vast majority of persons in sensations sufficiently pronounced to call their attention to the fact. Head is confident that every person giving a symptom complex, to account for which no definite causal factor can be found, should be given a subcutaneous tuberculin test to determine whether or not a tuberculous lesion is harbored. The confusing clinical picture presented by these slow, low-grade tuberculous toxemias cannot be interpreted otherwise. In 163 such cases in whom, for one reason or another, a subcutaneous diagnostic dose of tuberculin was given, a distinctive temperature rise and other signs indicative of a positive reaction were noted.

By far the largest group of cases fall into what Head terms the "cough and cold" group. These comprise 34 per cent. The second group he classes as the "abdominal distress" group. Twenty per cent. of the whole number fall into this category. The chief characteristic of this group of cases is the ill-defined nature of the abdominal complaint not fitting in well with a diagnosis as applied to disease of any one of the organs to which one ordinarily looks for the production of abdominal symptoms, namely, the appendix, gallbladder, pancreas, stomach or duodenum. About 15 per cent. of the cases fall into what is called the "chest pain" group. Many of the ill-defined neck aches which so-called neurotic women complain of, Head believes, are undoubtedly referred pains from forms of tuberculous pleurisy localized in small patches in the upper part of the chest, oftentimes in the extreme apex. In about 18 per cent. of these cases the chief symptoms complained of by the patients were those of physical and nervous exhaustion. A small percentage, 5 per cent., fall into the "malnutrition" group. In another small group of cases, 5 per cent. of the patients complain of a persistent pain in the back, low down over the lumbar region, either on both sides or the right or left side.

Radium Treatment of Menorrhagia.—In Stacy's opinion radium is the treatment of choice in (1) cases of hemorrhagia of menopause not associated with large fibroid tumors, and in which the possibility of carcinoma is definitely eliminated; (2) cases of menorrhagia in patients between the ages of 35 and 40 years, who have small submucous fibroid tumors, or, who have undemonstrable lesions; (3) cases of myomas in which there is a definite contraindication to operation; (4) cases of menorrhagia in the young person, who has resisted all medical treatment, in which very small doses should be given. In the majority of patients of more than 45 years of age; and in all in which there is intermenstrual bleeding, a diagnostic curettement is done by the Mayos previous to the radium treatment. If the clinical history is at all suggestive of a carcinoma of the fundus, a hysterectomy is done, for even a very thorough curettement may fail to reveal a carcinomatous focus. The dosage of radium is gaged by the age of the patient, and by the presence or absence of a tumor.

In the young person without a demonstrable tumor, and when it is desirable to continue menstruation, usually one application of 50 mg. of radium element for from four to six hours (200 to 300 mg. hours radium) is used. In older persons in whom it is desirable entirely to stop menstruation, it has been found that an exposure of 50 mg. for from ten to twelve hours has brought about the desired results. In cases in which large dosage is used, menstruation is usually irregular for about two months and ceases entirely after the second or third month; following the lighter exposures it becomes regular and normal in most instances in about two months.

It is the custom not to repeat the treatment until an interval of three months has elapsed. If, after that time, menorrhagia continues, a second treatment is given. It has been necessary to give a second treatment in ten instances in this series. In eight instances a hysterectomy was done later; one elsewhere one month after the radium treatment. One only of these eight patients had been given a second radium treatment. Reports have been received from 143 of the 175 patients treated and in fifty-five (38.5 per cent.) menstruation had ceased, not to return to the date of the report; in only fourteen did the menstruation become normal; in forty-two it was reported as regular but somewhat profuse, and in thirty (20.9 per cent.) it became profuse. Ninety-two patients report their condition as improved, and twenty-seven as not improved.

Missouri State Medical Association Journal, St. Louis

March, 1919, **16**, No. 3

Forty-Four Cases of Pregnancy Toxemia. G. C. Mosher, Kansas City.—p. 69.
Spasmophilia and Infantile Convulsions. J. M. Brady, St. Louis.—p. 78.
Value of New Ear Tests in Determining Cause of Vertigo. W. M. Reed, Kansas City.—p. 80.

New York Medical Journal, New York City

March 15, 1919, **109**, No. 11

Influenza Therapeutics in History. J. J. Walsh, New York City.—p. 441.
Official Provision for Tuberculous Soldier and What He Should Know About His Disease. S. A. Kopf, New York City.—p. 444.
*Nonspecific Hemoprotein Antigen Treatment of Arthritis. C. Brooks, and F. M. Stanton, Columbus, Ohio.—p. 452.
Rôle of Focal Infections in Psychoses. H. A. Cotton, Trenton, N. J.—p. 454.
Chronic Discharging Ear. C. M. Sautter, New York City.—p. 460.
Acute Posterior Urethritis: Its Seriousness and Proper Management. A. Strachstein, New York.—p. 563.
*Rapid Method for Determining Type of Meningococcus Infection. G. H. Robinson, Baltimore.—p. 464.
Envenomization Suggested as Etiology of Hydrophobia, Yellow Fever, Rocky Mountain Spotted Fever, and Cowpox. A. Young, Hamburg, Pa.—p. 465.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 465.

Hemoprotein Treatment of Arthritis.—The protein used by Brooks and Stanton for the purpose of combating streptococcus infections was prepared from ox blood fibrin by peptic and hydrochloric acid digestion, the products of this digestion being fractionated by precipitation with ammonium sulphate, the first fractions being rejected and the lower ones used. The protein is prepared in a dry state and kept in hermetically sealed glass ampules. These ampules are sterilized by heat. When used, the dry sterile powdered protein is dissolved in sterile 0.9 per cent. sodium chlorid solution and used at once by intravenous injection with aseptic technic. In some cases intramuscular injections were made. The matter of dosage does not seem to be very definite. Anywhere from 10 to 60 mg. seems to do equally well. The authors use ordinarily about 20 to 25 mg. intravenously and about 30 or 40 or more intramuscularly. Nine cases are cited.

Method for Determining Type of Meningococcus Infection.—The method used by Robinson is as follows: The spinal fluid from the patient is centifuged until clear; 0.5 c.c. of this fluid is added to an equal amount of each of the four type serums; the tubes are thoroughly shaken and warmed to 37 C. in a water bath. If a positive reaction is obtained a distinct flocculent precipitate forms in a few minutes.

Oklahoma State Medical Association Journal, Muskogee

March, 1919, **12**, No. 3

Spastic Colitis. A. W. White, Oklahoma City.—p. 57.
Significance of Abdominal Pain. J. M. Byrum, Shawnee.—p. 60.
Acne. C. H. Ball, Tulsa.—p. 63.
What Can We Do to Improve Humanity? M. A. Warhurst, Sylvian, Okla.—p. 65.
Focal Infections of Genito-Urinary Tract as Cause of Constitutional Diseases. J. Frischer, Kansas City, Mo.—p. 69.

Tennessee State Medical Association Journal, Nashville

January, 1919, **11**, No. 9

Case Illustrating Some Aspects of Focal Infections. R. L. Motley, Dyersburg.—p. 329.
Treatment of Insane in State Hospitals. W. S. Farmer, Nashville.—p. 332.
Surgical Treatment of Hyperthyroidism. E. H. Adkins, Chattanooga.—p. 337.
Pneumonia Following Influenza. H. A. Christian, Boston.—p. 339.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 22, 1919, **1**, No. 3034

British Military Surgery in Time of Hunter and in the Great War. A. Bowlby.—p. 205.
Capacity for Work After Amputations of Lower Extremity. S. T. Irwin.—p. 212.
Use of Ionization in Treatment of Certain Types of Facial Scars. H. S. Carter and A. D. E. Shefford.—p. 214.

Journal of Tropical Medicine and Hygiene, London

Feb. 15, 1919, **22**, No. 4

Dicercomonas Soudanensis. A. J. Chalmers and W. Pekkola.—p. 29.

Lancet, London

Feb. 22, 1919, **2**, No. 4982

British Military Surgery in Time of Hunter and in the Great War. A. Bowlby.—p. 285.
Buried Sequestrum: Post-War Problem. J. Phillips.—p. 291.
*"Propeller" Fracture. A. L. Johnson.—p. 293.
Blood Supply of Muscles. J. Campbell and C. M. Pennefather.—p. 294.
*New Germ of Paratyphoid. L. Hirschfeld.—p. 296.
Dinner Fork in Stomach and Duodenum. K. A. Lees.—p. 298.
Congenital Synostosis. E. S. Chesser.—p. 298.
Case of Contracture of Palmar Fascia. G. de Swietochowski.—p. 298.

"Propeller" Fracture.—Four cases of supracondylar fracture of the right humerus, caused by aeroplane propellers are reported by Johnson. The history of the injury is as follows: To start a nonself-starting aeroplane an air mechanic grasps a blade of the propeller and then turns it. At the same time the pilot opens the throttle in order to flood the cylinders with gas. At the word "contact" from the mechanic the pilot throws the switch into contact with the magneto, causing a spark, which ignites the gas and starts the engine. If the "team work" is faulty the mechanic is liable to be struck down by the propeller before he can escape. This was the history in the four cases forming the basis of this note.

New Germ of Paratyphoid.—In many specimens of blood examined by Hirschfeld for typhoid or paratyphoid, germs have been isolated by culture in bile which behaved bacteriologically like paratyphoid bacillus B, but were not in the least agglutinable by the corresponding specific serum, while the serum of the patient agglutinated the germ even in dilution 1:800. The clinical picture, temperature, etc., of patients infected by this germ is that of paratyphoid fever. From a bacteriologic point of view, there is no difference between the germ in question and the bacillus paratyphoid B. Hirschfeld looks on it as being a serologic variety of paratyphoid B, provoking, clinically, paratyphoid fever. This bacillus can be very virulent. Besides finding the bacillus in one patient who died of the disease, Hirschfeld isolated the same germ postmortem from the heart of a patient who succumbed to paratyphoid.

March 1, 1919, **2**, No. 4083

*Tetanus in British Armies in France Between November, 1916, and December, 1917. S. L. Cummins and H. G. Gibson.—p. 325.
Tetanus Treated in Home Military Hospitals from March, 1917, to April, 1918. D. Bruce.—p. 331.
Chronic Intestinal Stasis. W. A. Lane.—p. 333.
Wheelhouse's Operation for Urethral Stricture. J. B. Macalpine.—p. 334.
Gunshot Injuries of Cervical Nerve Roots. J. S. B. Stopford.—p. 336.
Case of Erythemia. M. H. Fraser.—p. 338.
Dislocation of Teeth. H. M. Savery.—p. 339.
*Intravenous Injection of Potassium Iodid in Tabes Dorsalis. F. J. Devota.—p. 339.

Tetanus in British Armies in France.—Of the 376 cases analyzed by Cummins and Gibson, 252 patients died and 124 recovered, a mortality of 67 per cent. Of the total deaths, 13 were from causes other than tetanus. The 376 cases fall into four groups: (*a*) Cases among British casualties, 291; (*b*) cases among men suffering from "trench feet," 24; (*c*) cases due to accidents and other causes, 48; (*d*) cases among German prisoners of war, 13. There were 278 cases of severe sepsis with 194 fatalities and 74 cases of gas gangrene with 56 fatalities. The time between wounding and the onset of tetanic symptoms varied from eighteen hours to 180 days. Of the fatal cases, the average period was twelve and a half days, and of the 112 recoveries fourteen and nine-tenths days. Tetanus occurred after amputation affecting the upper or lower limbs in 59 cases; 38 patients died as a result of tetanus and 15 recovered, while 6 died from sepsis and other causes after the tetanic symptoms had subsided. Among the 59 cases, 42, or 71.1 per cent., occurred after the amputation of the lower limb, and 16, or 27.1 per cent., after amputation of the upper limbs, while in one case both an upper and a lower limb had been amputated. Among the cases of amputation of the lower limbs in which tetanus subsequently developed the mortality was 76.3 per cent.; in the case of the upper limbs 60.0 per cent. Operative interference was resorted to after the appearance of tetanic symptoms in 27 cases. Of these, 22 died, a mortality of 81.48 per cent.

Nearly one fifth of the total number of cases occurred among persons to whom no inoculation had been given. Of the 376 cases, all but four, each of them fatal, were treated with antitoxin administered by the intrathecal, the intravenous, the subcutaneous, and the intramuscular method. The intramuscular combinations were attended with the smallest mortality and the intrathecal with the highest of the three, the intravenous route presenting dangers which are not encountered in the other three routes. In view of the great importance of making available at the earliest possible moment the largest possible dose of antitoxin, the authors consider that, in any given case, all three routes should be made use of, the intrathecal channel being exploited with the others as far as its limitations permit. As to the value of antitoxin treatment in tetanus, a steady fall in mortality has undoubtedly taken place, but it is urged that the greatest caution should be exercised in attempting to draw definite conclusions as to how this improvement has been brought about. When serum therapy is employed, the authors are strongly of the opinion that the antitoxin should be given at the earliest possible moment and that it should be given in large doses.

Intravenous Injection of Potassium Iodid.—In a typical case of tabes dorsalis seen by Devota, improvement followed after three intravenous injections of potassium iodid (30 grains dissolved in 4 ounces of normal saline solution); the shooting pains in the legs and feet disappeared entirely.

Archives des Maladies du Cœur, Paris

December, 1918, **11**, No. 12

*Traumatic Obliteration of Artery. J. Babinski and J. Heitz.—p. 529.
Experimental Arrhythmia of Undescribed Type. H. Busquet.—p. 550.

Traumatic Obliteration of Arteries.—Babinski and Heitz emphasize the importance of extremely careful analysis of the symptoms because these traumatic lesions generally involve more than the artery; the nerves are frequently injured, and the secondary disturbance from fibrous myositis and gangrene confuse the clinical picture. Other symptoms not directly connected with the obliteration of the arteries may also intervene, changes in the temperature and color of the region, or there may be reflex disturbances, edema or retraction. They review their extensive war experience in this line, saying that sluggishness in electric reactions and in certain reflexes may accompany hypothermia and have the same significance, from the lesser supply of blood, the long immobilization, and possibly reflex vasoconstriction.

Archives de Médecine des Enfants, Paris

February, 1919, **22**, No. 2

*The Rashes in Varicella. J. Comby.—p. 57.
*Tardy Relapse in Meningitis. A. Netter.—p. 72.
*Intraspinal Echinococcus Cyst. J. C. Mussio-Fournier.—p. 80.
*Present Status of Meningitis. J. Comby.—p. 90.

The Rashes in Chickenpox.—Comby applies the term rash to a premonitory eruption preceding the principal eruption in varicella, smallpox, measles, etc. It is probably an infectious or toxi-infectious erythema associated with the principal disease. It may suggest the possibility of a coincident scarlet fever, when such does not exist. In about 90 per cent. of the cases, this rash resembles the eruption of scarlet fever. In the others it suggests measles or rubeola until the chickenpox eruption becomes unmistakable. He describes nineteen cases, but adds that it occurs probably in not more than 1 or 2 per cent. of the cases of varicella. It usually precedes the principal eruption but exceptionally it may develop the third or fourth day of the eruption or at its close. In any event, it is ephemeral and is not accompanied by desquamation. Demme has reported a case in which the scarlatiniform rash recurred and preceded three waves of the varicella eruption. In one of Comby's cases a boy of 2 presented first a scarlatiniform rash and six days later a measles-like rash, at the beginning and in the course of his varicella. It does not require any treatment. One of his cases teaches that when smallpox is epidemic, it is better to vaccinate every one, young and old alike, regardless of their previous vaccination. In this case a child under 4 had a good vaccination mark but developed the scarlatiniform rash and a day later several papules which proved to be smallpox. Measles developed at about the same time, probably a hospital contagion. The child had been known to have been exposed to smallpox, but on account of its vaccination scar the disease had not been recognized. It was mild with prompt recovery.

Tardy Relapses in Cerebrospinal Meningitis.—Netter remarks that the polyvalent serums now used have rendered relapses in meningitis much less frequent, but in about 1.14 or 1.56 per cent. of his 350 meningitis patients there was a tardy relapse after thirty-three, forty-five, sixty or seventy-three days. In the two cases in which serotherapy could be applied promptly, the children recovered; the others were moribund when first seen. In order to ward off anaphylaxis, a small preliminary injection of serum was given before the serotherapy was started. In one case the relapse was unmistakably the result of an intercurrent measles in the infant of 8 months. In a boy of 11 the relapse followed two months after intercurrent measles plus diphtheria, and proved fatal. In one of the cases a girl of 5 seemed to have entirely recovered after the attack of meningitis, but other members of the family presented cases and the little girl developed the disease anew, after four months, probably from new infection as she had seemed perfectly healthy in the interim, while there was every opportunity for new infection in the environment. One young soldier developed extreme agitation, cyanosis, the feet and hands cold, with acceleration of the respiration and thready pulse, one hour after the intraspinal injection of the antiserum, nothwithstanding that the antiserum had been given subcutaneously twice just before, the first time 1 c.c. of a 10 per cent. solution of the antiserum, followed an hour later by 1 c.c. of the pure antiserum. The anaphylactic reaction was manifest for about three hours before complete disappearance. Two subcutaneous injections of ether seemed to have aided in its subsidence. A similar reaction followed the second intraspinal injection but it was less pronounced and briefer. The Besredka desensitization had evidently not warded off all phenomena of anaphylaxis but it seemed to have rendered them less severe than they might otherwise have been. This patient had been injected with a total of 260 c.c. of the antiserum in January and the relapse occurred in April. The first attack had left some contracture of the right side, and epileptiform symptoms developed after the second attack, suggesting that the latter was the flaring up of a latent focus. Although apparently recovered by June, he still has occasional epileptiform attacks.

Intraspinal Echinococcus Cyst.—Fournier's report was summarized in THE JOURNAL, Dec. 14, 1918, p. 2031, when it appeared elsewhere.

Meningitis.—Comby analyzes Simon Flexner's recent publications on prevention and specific treatment of epidemic meningitis.

Bulletin de l'Académie de Médecine, Paris

Feb. 4, 1919, 81, No. 5

Proposed Organization of the Medical Force of the Merchant Marine. Committee Report.—p. 132.
*Sequels of Gassing. C. Achard.—p. 135.
*Advisability of Training the Left Hand. Armaingaud.—p. 151.
Radical Cure in Case of Guinea Worm under Arsphenamin by the Vein. E. Jeanselme.—p. 156.
The Médan Infant Asylum during the War. Méry.—p. 158.

Sequels of Gassing in War.—Achard reports on 3,525 cases of persisting injury from war gases. The mustard gas type was responsible for 84 per cent. of these cases of sequelae, but the injuries from gases of the asphyxiating type were the most serious. The degree and extent of the injury of the lung can be estimated approximately by the reduction in the amount of carbon dioxid exhaled per pound and per hour. There may be a tendency to emphysema or to a pseudotuberculosis. The importance of not mistaking these sequels of gassing for true tuberculosis is evident; the man's whole future may be blasted by a mistake of this kind. The lungs cast no shadow, the sputum does not contain albumin or only for transient periods; the fever and the physical signs grow less and less, and after several months or a year the man is found free from symptoms. In one such case the fever kept up for thirteen months but then permanently subsided. In another case there were signs of bronchitis and suspicious apical lesions with hemoptysis, weakness, loss of flesh, and fever compelling repose. As late as two years after he had been gassed, the evening temperature often rose to 38.5 C. Not until after two years and four months was the temperature definitely apyretic, and the general condition began to improve. The gas in these two cases was of the chlorin type. The danger of superposed tuberculosis has not proved as great as anticipated, but cases have been encountered now and then. Only six passed through Achard's service, and the gassing may have merely aroused a latent disease. Experiments on laboratory animals seem to confirm that the toxic action of the gas in the lungs does not create an especially favorable soil for the development of tubercle bacilli.

Experience has shown that the sequels on the part of the eyes have not been as numerous or as severe as had been feared; keratitis is rare, but cicatricial deformity of the eyelids and of hands and joints and genital organs is more common, and may require operative correction. Among the other sequels, septicemic infection, fortunately very rare, is a formidable secondary complication of the blistering burns from gas. Anemia and asthenia are frequent, and long persist. Treatment of the sequels of gassing requires nothing special except that respiratory gymnastics will be found useful in helping to overcome the sequelae affecting the lungs. Exercises with the spirometer and the spiroscope and exercise of the chest muscles can be recommended. In the discussion that followed, a leading ophthalmologist stated that he had encountered only three cases of total blindness from gassing. Unilateral lesions were more common, mostly ulcerative keratitis infected with the pneumococcus.

Training of the Left Hand.—Armaingaud appeals to the authorities to take advantage of the opportunity that so many wounded men are being trained to use the left hand to introduce systematic training of both hands into the education of the young. He declares that we have no right to impose on the young this artificial disability by omitting to train both hands. Among the arguments cited is Benjamin Franklin's witty appeal in which "Left Hand" protests against the partiality shown her sister, "Right Hand." Armaingaud urges parents to train both hands from early childhood, and that the school authorities should insist on both hands being used in writing and other exercises. He suggests that some endowed prizes for teachers might promote the cause of training the left hand.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 20, 1918, 42, No. 36

*Arsphenamin in Treatment of Influenza. I. Bruhl and M. Franck. —p. 1183.
Antiseptic Power in Vitro of Arsphenamin. I. Bruhl and J. Michaux. —p. 1186.
*Oxygen in Cultures of Influenza Diplococcus. Dufour.—p. 1188.
*Alopecia after War Wounds of Skull. M. Villaret and Condomine. —p. 1189.
*Anemia and Infectious Jaundice. Ribadeau-Dumas and Nicolas.—p. 1194.
Gangrene of Lung in Influenza. P. E. Weil.—p. 1195.
*Exophthalmic Goiter from Emotional Stress. G. Etienne and G. Richard.—p. 1196; Id.—p. 1199.
The Influenza of 1918. R. Le Clerc.—p. 1204.
Spastic Stenosis of Esophagus with Cancer. R. Savignac and A. Alivisatos.—p. 1209.

Streptococcus Pleurisy in Influenza. Olmer and Vuillet.—p. 1212.
*Acute Nephritis from Chilling. H. Bourges.—p. 1215.
*Walled Off Meningitis in Infants. R. Marcland.—p. 1218.
*Alopecia from Influenza. G. Thibierge.—p. 1223.

Arsphenamin in Influenza.—Bruhl and Franck gave arsphenamin by the mouth and by the vein in thirty-eight cases of the gravest forms of influenza when the epidemic was at its most murderous height, as they say. The death rate in this group was 21 per cent., which they regard as a striking result under the circumstances.

Bacteriology of Influenza.—Dufour reasoned that the prevalence of pulmonary lesions in influenza testifies to the affinity of the germs for oxygen. Consequently he arranged the culture medium so that oxygen bubbled into it at times during the first two days. A diplococcus taking the gram was cultivated from the blood in large numbers by this means, while the nonoxygenated mediums showed no cultures.

Anemia with Infectious Jaundice.—The jaundice in Ribadeau-Dumas' case had been observed at intervals for a year, with periods of fever, and the anemia and weakness finally became extreme. The reds numbered only 530,000 when 250 c.c. of citrated blood were infused. It was followed by a chill, but in five hours the reds numbered 1,300,000. Six days later another transfusion apparently completed the cure; in a few weeks the man's aspect and liver outline were those of health.

Exophthalmic Goiter and the Bombardments.—Etienne and Richard relate that the repeated violent bombardments of Nancy from the big guns and aeroplanes enabled them to study the effect on the endocrine glands of emotional stress. In two women of 24 and 34, exophthalmic goiter developed in an acute form with high blood pressure. In two other young women the blood pressure was below normal. They note further that in some women menstruation was arrested by a bombardment; glycosuria was brought on in other cases. In one man of 36 symptoms of Addison's disease appeared and these were followed by the symptoms of exophthalmic goiter. These latter symptoms subsided in three months but the Addison symptoms persisted to a fatal termination in about eighteen months from the first signs of trouble. The nervous crises appeared first after the destruction and bombardment of La Courneuve at Paris, close to his home. In four days the skin showed bronzing, with patches on mucous membrane, rapid pulse and low blood pressure. This case corroborates the possibility of an emotional origin of Addison's disease as has been demonstrated for cases of exophthalmic goiter under similar stress. In two other cases Addison's disease became superposed on preexisting exophthalmic goiter. Exophthalmic goiter of emotional origin may thus develop under the influence of suprarenal hyperfunctioning, but it can also develop with suprarenal hypofunctioning, and suprarenal trouble may also become superposed on exophthalmic goiter. In two cases of this latter type, the bronzing is extreme, but one man is still at work ten years later, and all the symptoms have subsided in the other.

Acute Nephritis.—The healthy young sailor developed acute nephritis, with 61 gm. albumin in the urine, a few days after being in the water for several hours when his ship was torpedoed. Apparently complete recovery followed in less than three months.

Walled Off Meningitis.—Marcland injected antimeningococcus serum directly into the ventricles of an infant only 4 months old who presented symptoms of a meningitis that had become partitioned off. The meningitis had apparently subsided when the skull began to enlarge, with return of severe symptoms of meningitis, about five weeks after the temperature had returned to normal. About 20 c.c. of the antiserum was injected into one ventricle and 10 c.c. into the spinal cavity, after 70 c.c. of fluid under high pressure had spurted when the ventricle was punctured. The other ventricle was injected three weeks later with 40 c.c. of antiserum, with 10 c.c. in the spinal cavity, and then all symptoms retrogressed. Now, three months later, the child looks well nourished and otherwise normal except for blanching of the disks, but vision has been fairly recuperated in one eye and there is perception of light by the other eye. Notwithstanding that only four injections of antiserum were made in the course of nearly ten weeks, the meningitis and the secondary pyohydrocephalus completely retrogressed. He has compiled 7 cases of walled off meningitis discovered only at necropsy; 18 in adults with 40 per cent. of recoveries after intraventricular injection of the antiserum, and 11 in infants, with recovery in nearly 50 per cent. In the 6 fatal cases a focus was found at some other point in the brain, explaining the lack of success from the intraventricular injection. In the case here reported, the small amount of fluid obtained early in the meningitis by lumbar puncture should have warned that the communication between the brain and spinal cavity was already more or less obstructed, as even then there were signs of hypertension in the brain. The facility of intraventricular puncture in infants should turn the scale in favor of applying it early, at the slightest suspicion of obstruction of communication. Prompt puncture may ward off hydrocephalus and blindness. When slight or no benefit is observed, a third focus, bulbocerebellar, may be assumed. It is isolated from the local treatment above mentioned but might be reached by the orbitosphenoidal route described by Bériel of Lyons.

Falling of the Hair After Influenza.—Thibierge has been impressed by the number of the men and women who complain that their hair is falling out since they had influenza. The alopecia seems more rapid and more intense than usually follows infectious diseases, but the hair soon begins to grow again except with those with an inherited tendency to baldness. Stimulating local applications and general tonic measures aid in the recuperation.

Journal de Médecine de Bordeaux

Feb. 15, 1919, **90**, No. 3

*Grafts of Adipose Tissue. W. Dubreuilh.—p. 47.
*Suture of the Lung for War Wounds. Brau-Tapie.—p. 50.
*Fixation Abscess in Treatment of Influenza. J. Vergely.—p. 57.
*Transient Epidemic Amaurosis. Verger and Moulinier.—p. 61. (Society Proceedings.)

Grafts of Fat Tissue.—Dubreuilh has been very successful in remedying deformity from cicatricial retraction of the muscles of the face by introducing a flap of adipose tissue to fill up depressions. He operates under local anesthesia, excising the superficial cicatricial tissue with the epidermis; what is left becomes spontaneously resorbed. The skin around is loosened up for quite a distance so that it can be drawn up to cover the gap. When all is ready for the flap he cuts it from the adipose tissue in the front or side of the thigh. He sutures with very fine catgut; the two ends, each in a much curved needle, are worked in and crossed like the lacing of a shoe, the stitches only 0.5 or 1 cm. apart, the threads crossing each time. The suture is entirely intradermal, and the ends are tied together, cut off close and buried. If the stretch to be sutured is long, he ties the catgut ends and begins anew at different points, thus suturing in relays. As it is difficult to suture over the slippery fat tissue, the suture is made first but left loose. It is an easy matter then to slip the flap of fat under the suture and then draw the threads tight over it. Even if suppuration occurs and the graft is cast off, it is not expelled like a sequester but seems to melt away, and the cosmetic result may be good even with this.

Suture of the Lung.—Brau-Tapie has had recently in his charge sixty-three cases of war wounds of the chest. In eleven operative intervention seemed indicated, and six of these men were evidently saved by it. Resection of the third or fourth rib in the anterior wall for a distance of 5 cm. gives ample access to the lung; from the rear it is almost impossible to draw up any part of the free lung. Even when the wound is in the rear of the lung, it can be reached more readily from the anterior wall. After evacuating all the fluid blood and the clots in the pleural cavity, he rinsed it out with ether, and the pulse and respiration did not seem to be modified by this. His experience teaches that surgical intervention is called for when the pulmonary hemorrhage continues and the projectile is as large as a nut or larger. Intervention should be complete when possible. The hemothorax consecutive to the intervention should be punctured four or five days later.

Fixation Abscess in Treatment of Influenza Pneumonia.—In Vergely's 143 cases of influenza he never encountered the form with acute pulmonary edema which others have described, but in other bronchopulmonary complications he found the fixation abscess an important adjuvant to the ordinary measures in fourteen cases.

Epidemic Amaurosis.—Verger and Moulinier reported at a January meeting of the Société de Médecine et de Chirurgie of Bordeaux the occurrence of a small epidemic of transient blindness. Three of the five persons on board a small vessel soon after its arrival were taken suddenly sick, and complained of loss of vision but there was no fever; two died within three days, a man and a woman. The man who recovered became blind the fourth day. After twelve days of amaurosis, vision gradually returned, although there were still evidences of optic neuritis. Three other cases of the apyretic amaurosis developed in the same locality, without contact with the first group. One of the men was just recovering from influenza. He told that a veil seemed to be drawn over his eyes, progressing from left to right, shutting off vision completely by the thirty-sixth hour. The veil gradually passed off in the same way, from left to right. No causes of possible common intoxication could be discovered, but in the second group influenza might possibly be incriminated.

Presse Médicale, Paris

Feb. 6, 1919, **27**, No. 7

*Sciatica. J. A. Barré.—p. 57.
*Autovaccines in Treatment of War Wounds. L. Julien and De Lareinty Tholozan.—p. 60.

Sciatica.—Barré's four illustrations show certain objective findings in the leg with sciatica. The discovery of any of them confirms the reality of the complaints of sciatic pain. These signs include a reduction in the temperature of certain zones in the leg affected, especially the lower half of the outer aspect of the leg. The patient must get out of bed for these tests, and walk around a little with bare legs and feet. The lower temperature can then be readily determined by applying the back of the index and middle finger to the skin. The observer's hands must be warm at the time. This hypothermia is often a very early and constant sign of sciatica, and may be the sole objective manifestation of it. The pain probably induces some superficial vasoconstricting reflex in the skin. Other signs reveal hypotonicity in the muscles. As the man kneels on a chair, the normal foot is in slight extension, while the foot on the side with the sciatica is held at an exact right angle; the region just above the heel also looks sunken in. A retromalleolar reflex can also be elicited on the side of the sciatica as the man kneels on a chair. This reflex precedes the Achilles reflex and atrophy of the Achilles reflex precedes the atrophy of the muscles of the leg. In treatment Barré warns against the use of the actual cautery. It does no good and may aid in simulation. When a man with sciatica says he cannot walk without a cane, Barré keeps him in bed until he thinks he can dispense with the cane. In mild cases of sciatica, massage, hot air douches, prolonged baths and rubs with chloroform liniment at first and then turpentine, with relative repose and some sedative, generally answer the purpose. He has had over a thousand cases of sciatica in the last few months. Epidural injections of sedatives and other substances never gave durable benefit. In extremely painful, acute cases, bed rest without moving or rubbing was the rule for the first few days, then wet cupping and mustard pastes along the most painful zones, with sedatives, gave rather prompt results. With this acute pain, ionization with solutions having an aconite base has given very encouraging results. He gives no details of this technic but adds that this simple method deserves wider adoption in the clinic.

Vaccine Therapy of War Wounds.—Julien and Tholozan have found a sensitized autovaccine extremely useful. They sow on gelose a loopful taken from the depths of the wound. After incubating for forty-eight hours, all the colonies that have developed are scraped off and are suspended in 5 c.c. of polyvalent serum. This sensitizes the germs present, and the vaccine thus prepared has the rapid immunizing properties of a prepared serum with the durable immunization conferred by a vaccine. The microbian emulsion is incubated at 37 C. for an hour and a half at least, then centrifuged, the sediment rinsed twice with physiologic serum, then heated twice, for an hour each time, to 50 or 60 C. The germs are then counted and diluted with physiologic serum until there are 50 million per cubic centimeter. Then 1 c.c. of this dilution is injected in the scapula region. Suppurations that had been keeping up interminably were promptly arrested by this vaccine therapy, which they think deserves wide application.

Revue de Chirurgie, Paris

May-June, 1918, **37**, No. 5-6, Pub'd Feb., 1919

*False Actinomycosis. H. Gougerot.—p. 365.
*Dislocation of the Foot Below the Astragalus. E. Quénu.—p. 380.
*Exploratory Arthrotomy of the Knee. P. Descomps and P. Moulonguet.—p. 391.
Secondary Suture of War Wounds. A. Schwartz and H. Lew.—p. 401.
Serotherapy of Local Septic Processes. A. Basset.—p. 419.
Prosthesis for the Leg. J. Amar.—p. 437.
Kapok Dressings. J. Silhol.—p. 463.
Contusion of Spongiosa with War Wounds. de Gaulejac and Nathan.—p. 483.
Anatomy and Physiology of the Forearm. F. Masmonteil.—p. 506.
The Laws of Healing of Wounds. A. Lumière.—p. 549.

False Actinomycosis.—Gougerot warns that a number of other pathologic conditions may simulate the clinical and bacteriologic aspect of actinomycosis: syphilis, cancer and tuberculosis, besides various microbian skin affections and others. In one case described the cheek was supposed to be the seat of an extensive process of actinomycosis, but it proved to be a syphilitic osteomyelitic process, with sequesters and fistulas. In another case the foot was involved; ordinary treatment as for any pyodermatitis cured the lesion in thirteen days after it had been dragging along for three months under treatment for supposed actinomycosis. In two cases cancer simulated the latter, even to the "bacteriologic" findings until the microscope revealed the cancer in an excised scrap. The cancer fistulas discharged granules simulating the granules of the fungus, and filaments took the stain. Biopsy may be the only means to differentiate the case. Tuberculosis is most frequently confused with actinomycosis; even Poncet made this mistake twice. Gougerot has seen it made with tuberculous lesions in the parotid region, in the ilium, and on the chest. Inoculation of guinea-pigs here solved the problem. In one case a fistulous affection of the throat was cured by excision of the focus after failure of all measures addressed to actinomycosis.

Dislocation of the Foot Below the Astragalus.—Quénu discusses luxation inward and forward as well as backward and outward luxation.

Exploratory Arthrotomy of the Knee.—Descomps and Moulonguet describe the technic for extensive arthrotomy in the exceptional cases in which intervention of the kind is required.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 8, 1919, **49**, No. 6

*Deafness from Chenopodium Poisoning. E. Oppikofer.—p. 161.
*Acute Appendicitis in the Elderly. J. Dubs.—p. 172.

Chenopodium Poisoning and the Hearing.—Oppikofer adds another to the four cases he has found on record in which bilateral deafness developed in consequence of poisoning from chenopodium. The two adults and three children affected all presented symptoms showing severe general poisoning, to which the adult who had taken the largest dose succumbed. The others recovered in a few days to two weeks. He reviews the literature on chenopodium poisoning, saying that in none of the other ten cases on record was the hearing mentioned, so presumably the drug did not induce deafness. Staggering, extreme vertigo and inability to stand without support were recorded in the cases with deafness, suggesting impairment of the vestibular as well as of the cochlear functioning. The optic nerve seems to be more resistant to the origin, the patient recovered under medical measures alone. In the pneumonic and pleuritic cases operative measures are indispensable. He adds that resection of a rib is extremely simple, and marvelous in its effect. Only when there are several foci and they are small, medical treatment might have to be the sole resource.

Dec. 21, 1918, **32**, No. 51

Experimental Trypanosomiasis. M. Torres and J. Villaça.—p. 401.
*Blood Pressure in Malaria. C. Fraga and E. Boaventura.—p. 402.
*Glycerin in Conservation of Serums. A. Moses.—p. 403.

Blood Pressure in Acute Malaria.—Fraga and Boaventura have been making a special study of the arterial tension in different stages of malaria, finding that the blood pressure is subnormal, both the maximal and the minimal tension. This suggests the necessity for suprarenal treatment to supplement quinin in treatment of acute malaria, as the hypotension is a sign of sympathetic-suprarenal insufficiency. Fraga called attention last year to the characteristic difference in the tension and in the pulse when they were taken reclining and again when the patient stood up for the tests. He emphasized the importance of this orthostatic tachycardia as a sign of suprarenal insufficiency.

Conservation of Immune Serums with Glycerin.—Moses relates that the addition of chemically pure and neutral glycerin to hemolytic serums, complement fixators, agglutinating and precipitating serums serves to protect them against contamination and renders them durable. He advises using 50 per cent. glycerin. With this the serums can be kept in glass without fusing. He has found that the glycerin aided in the conservation of serum from patients, so that the Wassermann reaction or fixation of complement test could be applied with full precision months or even a year later.

Reforma Medica, Lima

January, 1919, **5**, No. 53

*Scientific Pan-Americanism. C. E. Paz Soldan.—p. 3.
*Necessity for Unification of Scientific Efforts. E. Escomel.—p. 4.
*Influenza in Lima. C. E. Paz Soldan.—p. 5.

Scientific Pan-Americanism.—See news columns, March 22, 1919, p. 879.

The Instituto Oswaldo Cruz in Brazil.—Escomel was much impressed by the advantages of the organization of scientific efforts as he witnessed the working of the Instituto Oswaldo Cruz at Rio de Janeiro with its numerous branches scattered over the country. They are independent institutions to a certain extent, like the Butantan Snake Institute, but form part of a great whole which has the benefits of organization and a directing plan, an esprit de corps, emulation and devotion in scientific research and the production of therapeutic serums, vaccines, etc. He pleads for the establishment of a central institution of the kind in Peru.

Influenza in Peru.—Soldan relates that influenza appeared at Lima in a mild form in October, but the epidemic changed to be more serious toward the close of November, and by the end of the year the mortality totaled 600 deaths above the average. He notes that the deaths from influenza also contributed to raise the mortality from tuberculosis. The schools were closed during the first two weeks of November and the epidemic seemed to be under control when the celebration of the armistice or other reasons caused it to flare up with greater vigor. The Consejo Superior de Higiene took measures, December 17, to provide hospital facilities for the sick, and prohibited certain public gatherings but did not close the cinemas. The only measure that had been officially taken before this date was a decree dated November 28 for compulsory notification of cases of influenza, but this was not enforced.

Repertorio de Medicina y Cirugia, Bogotá

January, 1919, **10**, No. 4

*Premature Separation of Placenta. M. Canales.—p. 172.
Psychology and Modern Penal Laws. J. Bejarano.—p. 175.
Colored Glasses for Photophobia. V. Ribon.—p. 186.
Infant Feeding. R. Diaz V.—p. 194.

Premature Separation of the Placenta.—Canales was summoned to a woman of 42 nearly at term with her fifteenth pregnancy. A sudden agonizing pain and flood of blood from the vagina could not be explained by placenta praevia or rupture, only by premature separation of the placenta, which proved to be the case. The fetus was dead; the anemia from the severe hemorrhages was effectually combated. He cites authorities to show the rarity of this mishap, one in 7,000, one in 1,000, one in 800, according to different writers. The mortality of the mothers is said to average 60 per cent., and of the fetus 100 per cent. All recommend rapid clearing out of the uterus. Cesarean section is usually out of the question on account of the losses of blood. None of the causes usually invoked existed in the case here reported except the large number of preceding pregnancies. When the fetus and vagina had been expelled he took the uterus in his hands and expelled further a great quantity of clots, following this with an injection of pituitary extract. Under this, retraction promptly occurred while the ice-cold woman was warmed and stimulants given.

Semana Medica, Buenos Aires

Dec. 26, 1918, **25**, No. 52

*Conservative Treatment of Rupture of Uterus. Chamorro.—p. 755.
*Partitioned Off Pleurisy with Effusion. M. E. Pignetto.—p. 758.
Mortality from Influenza. E. R. Coni.—p. 760.
*Errors in Conception of Tuberculosis. M. R. Castromán.—p. 761.
Prophylaxis of Tuberculosis. W. Alvarez.—p. 775.
Sugar in Treatment of Tuberculosis. J. S. Picado.—p. 781.
*Influenza in Paraguay. M. A. Moreno.—p. 785.
Psychology of the Aviator. II. J. A. Lopez.—p. 786.

Conservative Treatment of Rupture of Uterus.—Chamorro applied in a case described the method advocated by Boero at the International Medical Congress in 1910. The rupture was transverse and fully 10 cm. long, in the anterior face of the lower segment of the uterus, and the woman, a novipara, exhibited the symptoms of shock. Chamorro succeeded in grasping with his fingers the upper lip of the rupture at the extreme right, while an assistant forced down the uterus by pressure from without. A firm grasp with forceps was taken as the fingers let go, and the same procedure was repeated with the upper lip at the extreme left. By this means the whole of the upper lip was drawn down, closing the gap as one lip lapped over the other, the peritoneal aspect of one in contact with the uterine surface of the other. Gauze was packed in tight to hold the parts in position. The handles of the forceps were wrapped in gauze and the vagina packed firm, and the patient placed in Fowler's position, with ice to the abdomen and permanent proctoclysis. Seventy-nine hours later the forceps were removed, the last ones first. The temperature kept normal till the fifth day when a slight rise was combated with a purgative. There had not been much loss of blood, not over 300 gm., and recovery was smooth. Reexamined several months later the overlapping tissue can be felt as a linear scar, about 1 cm. wide, where the one lip laps over the other, and there has been no further disturbance at any time. Chamorro adds that the success in the case confirms that obtained constantly in other cases.

Blocked Pleurisy.—Pignetto relates that in puncturing the pleural effusion in a man of 45, after about 200 gm. of fluid had been evacuated, the man exhibited symptoms of distress and coughing and no fluid could be aspirated. Another trocar was introduced at a point farther along, and here the fluid flowed freely, 350 gm. being thus aspirated. The pleurisy was of the serofibrinous type and the man was a hard drinker, but recovery after the evacuation followed the usual course.

Vaccine Therapy of Tuberculosis.—Castromán writes from Montevideo to emphasize the importance of the mutations of the tubercle bacillus, and the necessity for taking them into account in vaccine prophylaxis and therapy in tuberculosis. He accepts Ferran's theory that the Koch bacillus represents merely the third or gamma stage in the evolution of the bacillus from an atoxic alpha form which induces the predisposing phlegmasia. The vaccine from this nonacid resisting, alpha form is the true prophylactic, he reiterates.

Influenza in Paraguay.—Moreno's experience with the mild and grave forms of influenza when it swooped down on Paraguay repeats what was observed in other countries.

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EPIDEMIC ENCEPHALITIS (NONA)

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Following Sainton,[1] we may define this disease as "a toxic, infectious, epidemic syndrome, characterized clinically by the triad lethargy, ocular palsies, and a febrile state; and anatomically by a more or less diffuse encephalitis, most marked in the gray matter of the midbrain."

The term "lethargic encephalitis," proposed by Economo[2] in 1917, is descriptive of the most important clinical and anatomic features; but it is illogical, as the patient, not the encephalitis, is lethargic. As there is no other form of encephalitis known to occur epidemically, it would appear sufficiently distinctive to designate the disease as "epidemic encephalitis." The term "sleeping sickness" has already been appropriated for the endemic trypanosomiasis of Africa, and should, therefore, be avoided in connection with the present affection. "Nona," a meaningless word used for a similar disease in 1890, has the advantage of being short as well as noncommittal, and should perhaps be revived.

EPIDEMICS, PAST AND PRESENT

It is a striking fact that the only epidemic appearance of any similar disease in the past has been in connection with epidemics of influenza. Following the pandemic of 1889-1890, the mysterious nona appeared in northern Italy and then in Hungary, and spread westward to Germany, France and Italy. Somnolence was a prominent feature, and cranial nerve paralyses were observed which led Mauthner[3] in 1890 to express the opinion that the probable lesion of nona was an acute hemorrhagic poliencephalitis. The disease was mild, and there were not enough fatalities to permit of any extensive anatomic study. A concise review of the nona literature was contributed in 1892 by a Frenchman, Longuet.[4] Earlier accounts are necessarily more vague. Càmerarius, who described a grip epidemic in Tübingen in 1718, mentioned a sleeping sickness (*Schlafkrankheit*) in connection with it. In 1768, Lepecq de la Cloture described a "coma somnolentum" after the grip, and Ozanann, who, in 1835, wrote a history of epidemic diseases, mentioned epidemics of "catarrhal fever" with "soporosité" as having occurred in Germany in 1745, in Lyons in 1800, and in Milan in 1802. Nona apparently was not observed during the influenza epidemic which swept this country in 1890, as it is not mentioned by Archibald Church[5] in his exhaustive article on the nervous complications and sequelae of the grip.

The present epidemic, like that of nona in 1890, first appeared in eastern Europe, in Austria, where the name "lethargic encephalitis" was given to it in 1917. Thence it spread westward, reaching France and England early in 1918, and this country in the fall of the same year. The etiologic relationship of this disease to influenza rests on the above described coincidence of the epidemics. It is not common for the individual patient to have had a clinically distinct influenza. The encephalitis may itself be a cerebral form of influenza, or it may be caused by a separate virus which in order to become active must have been in contact at one time or other with that of influenza. In none of the eleven cases which form the basis of the present paper had there been any definite preceding influenza. However, I have been impressed by the fact that nearly all of the patients whom I have seen had been in a more or less run down or exhausted condition prior to the onset, which condition may have predisposed to a localization of the virus in the brain. In this connection it is significant that the part of the brain chiefly involved, namely, the brain stem and basal ganglions, is particularly liable to be affected by poisons, whether exogenous or endogenous. It is this part of the brain which is most affected by gas poisoning and which is the seat of the sporadic poliencephalitis, particularly frequent in connection with alcoholism and other toxic states.

PATHOLOGY

I have had opportunity to make preliminary examination of the brains in two cases in which complete necropsies were performed. The two brains were very similar, the gross changes consisting of edema, congestion and minute hemorrhages, most numerous in the brain stem, basal ganglions and centrum ovale. The histologic changes are also similar in the two cases and are mainly found in the basal ganglions and brain stem down to the upper part of the bulb. They consist principally of dense accumulations of mononuclear cells around the vessels and of small hemorrhages. There is little evidence of necrosis or of extensive tissue destruction, in which respect this disease differs from poliomyelitis. This distinction is in accord with the clinical fact that paralysis is a much more conspicuous symptom of poliomyelitis than of epidemic encephalitis. Little or no evidence of inflammation was found in the cortex or the meninges, but there has not yet been sufficient time for a systematic examination of the entire brains.

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[1] Sainton, P., Presse méd. **26**: 487 (Sept. 23) 1918.

[2] Economo: Wien. klin. Wchnschr., July 26, 1917.

[3] Mauthner: Wien. med. Wchnschr. **40**: 962, 1890.

[4] Longuet: Semaine méd. **12**: 275, 1892.

[5] Church, Archibald: The Nervous Features and Sequences of la Grippe, Chicago M. Rec. **1**, 1891.

SYMPTOMATOLOGY

The onset was gradual, and the early symptoms were usually attributed to the preexisting exhausted or toxic state. I do not know of any case with such sudden onset of severe general infection together with paralysis or other pronounced cerebral symptoms as in poliomyelitis or meningitis. The first suggestive symptoms have usually been blurring of vision with more or less definite diplopia, together with progressive listlessness which, when pronounced, is called lethargy. The facies gradually becomes extremely characteristic with masklike, immobile features, half open eyes and a fixed, more or less puckered or distorted position of the mouth. There is not so much real sleep as is indicated by the sleepy expression of the patient. In fact, some of the patients actually suffer from insomnia, and the "lethargy" sometimes bears about the same relation to sleep as the compulsive laughter of the pseudobulbar paralysis patient does to a normal laugh; or as the calm and stoic facies of the actually irritable and peevish paralysis agitans patient does to true serenity. In other words, the lethargic appearance is only a sign of the involvement of the cerebral mechanism of expression, as part of a general affection of the whole tonus-regulating apparatus.

In severe cases the whole body becomes rigid and all movements slow and labored, the condition resembling both catatonia and advanced parkinsonian rigidity. There is a good imitation of the flexibilitas cerea of the cataleptic state, and any attempted movement is likely to result in a coarse tremor. Some patients have crises of coarse tremor or choreiform jerkings attended with profuse perspiration and weak, rapid pulse. In one case, otherwise not severe, coarse jerkings, almost choreiform in type, have become very troublesome, and it is an interesting observation that this disturbance has been temporarily controlled by scopolamin.

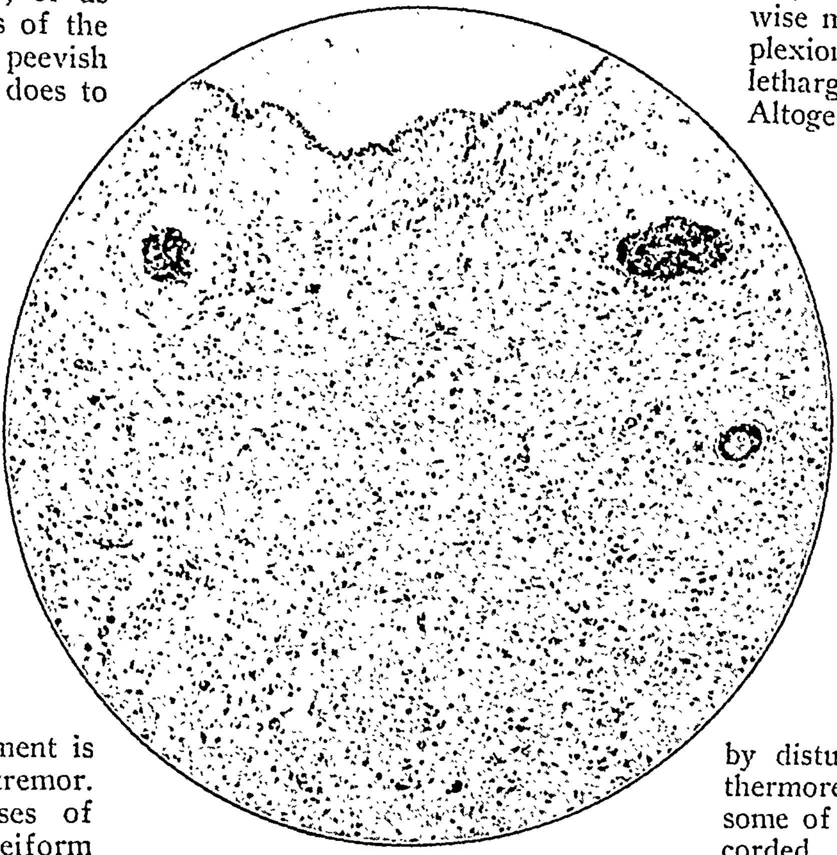

Fig. 1 (Case 2).—Left thalamus at floor of lateral ventricle: perivascular infiltration; × 80.

The frequently observed retention of urine and difficulty in speech and swallowing are probably in most cases part of the same type of disturbance which is due to affection of the above-mentioned tonus-controlling extrapyramidal motor apparatus. This apparatus, according to recent investigations, has its centers in the basal ganglions, which, as stated above, are among the favorite sites of the inflammatory changes in this disease. That the rigidity may exist without affection of the voluntary or pyramidal motor system is shown by the fact that the tendon reflexes, as well as the abdominal and plantar reflexes, may remain practically normal. True paralysis, even of the ocular and facial muscles, may be absent. It is possible to distinguish between the cases of principal involvement of the basal ganglions with the above-mentioned features, and cases with more pronounced pontine involvement, such as Case 1 in this paper. This patient had distinct external rectus and facial paralysis on the right side, and spastic paralysis with increased reflexes in the left arm and leg. In most cases we have a combination of the basal ganglions type and the pontine type, but it is always well to attempt to analyze the form of motor disturbance in the given case. The early tendency to ocular motor disturbance indicates primary involvement of the upper part of the brain stem around the aqueduct of Sylvius and the third ventricle. The fact that in cases of tumor and other circumscribed lesions in this region lethargy and somnolence are frequently mentioned has led previous observers to suspect the existence of a sleep center in this locality.

The early occurrence of the lethargy also points to its being a focal symptom rather than an expression of intoxication of the higher brain centers. In otherwise mild cases with good complexion and clear tongue, the lethargy may be very marked. Altogether it is safe to predict that careful study of the symptoms and lesions of this disease will help us to interpret many hitherto obscure symptoms, and throw a valuable side light on such affections as paralysis agitans, chorea, Wilson's disease and perhaps even dementia praecox.

Fever is usually present to a variable extent, but like the lethargy it need not always bear a direct relation to the amount of infection present and may even, to some extent, be caused by disturbance of the cerebral thermoregulatory apparatus. In some of the fatal cases here recorded, hyperpyrexia attended the ushering in of bulbar symptoms which caused death by respiratory paralysis. Anesthesias have not been seen, and headache and other pains have been inconspicuous. Consciousness is usually retained nearly to the end, though all forms of expression of it may be nearly abolished.

LABORATORY TESTS

The spinal fluid was always clear, sometimes under increased pressure, and usually showed a slight increase in globulin. The cell count was less than 10 in six cases, 10 in one, 25 in one and 26 in one. The cells were mononuclear. Results of cultures of blood and spinal fluid, both during life and after death, were negative. No bacteria were seen in sections of the brain. Leukopenia was observed in only one case; slight leukocytosis was observed more frequently.

REPORT OF CASES

Case 1.—*History.*—A girl, aged 9 years, referred by Dr. Bayard Holmes, Feb. 3, 1919, had been noticed by her mother to be cross eyed, Dec. 27, 1918, but this condition was not constant until January 12. On the following day, she was examined by an ophthalmologist, who found paralysis of the right external rectus. January 15, unsteadiness of gait was noticed, and on the 16th, she had difficulty in holding objects in the left hand. Within the next week, the left arm became paralyzed and, February 1, difficulty in swallowing set in. Indistinctness of speech was first noted about January 20. February 3, the patient was able to walk with aid into my office, but was weak and unsteady. She was admitted to the Presbyterian Hospital on the same day.

Examination.—The patient could walk with a little support, but dragged the left leg. The pupils, eyegrounds and visual fields were normal. Horizontal nystagmus was present. There was paralysis of the external rectus of the right eye. The facial muscles were weak on both sides, more on the right. The patient puckered the lips poorly and could not whistle. The tongue on protrusion deviated to the left. The neck was not rigid. The left arm was completely paralyzed, and there was loss of movement of the left toes and ankle. The tendon reflexes were markedly increased on the left side, and a left Babinski sign was present. Sensation was normal. The speech was slurred and almost unintelligible.

Lumbar puncture yielded a clear fluid with negative Wassermann test, while the Nonne-Apelt globulin test was weakly positive. The cell count was 4. The Lange colloidal gold test gave a rather strong reaction (2343321100).

The blood gave a weakly positive Wassermann reaction, as did the blood of the mother; but there were none of the ordinary symptoms of congenital syphilis.

Clinical Course.—During the following twelve days, the temperature every day ranged between 99 and 100, and the pulse rate was usually between 90 and 100. The leukocyte count was 7,100, February 4, and 9,250, February 8. For some days, the patient improved considerably in regard to talking and swallowing, but February 8 the speech again became very indistinct. The paralysis remained unchanged, and the ankle clonus and the Babinski sign were constantly obtained on the left side. The abdominal reflexes were absent. At noon, February 14, she suddenly developed respiratory difficulties and signs of pulmonary edema. At 7 p. m. she improved, but four hours later, the condition grew worse, and she died at 1 a. m., February 15. Necropsy was refused.

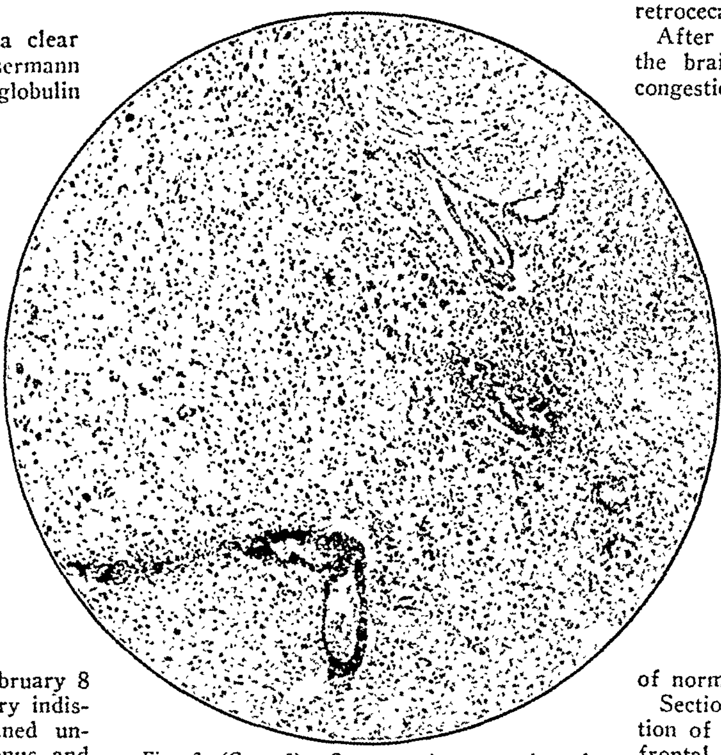

Fig. 2 (Case 2).—Corpus striatum: perivascular infiltration and diffuse inflammation; × 65.

Case 2.—*History.*—A married woman, aged 34, who had borne eight children and who was now in the sixth month of pregnancy, seen, Feb. 10, 1919, with Dr. Paul Kelly, about three weeks previously had become listless and complained of fatigue and headache. There had been some nausea but no vomiting. About February 1, she grew worse, was somewhat excitable for a few days, and then became dull and drowsy, with staring eyes, and talked very little. When admitted to the Swedish Covenant Hospital, February 9, the temperature was 99.4, pulse 110, and respiration 34. On the following day the temperature ranged from 98.8 to 100; the pulse, from 114 to 122. Her face had a dull expression and there was slight facial palsy on the right side. The protrusion of the tongue was weak. The back was somewhat rigid. The tendon reflexes in the left arm and leg were stronger than those of the right side, but there was no rigidity of the extremities. The pupils and eyegrounds were normal. Sensation was normal. Mentally the patient was dull, slightly confused and disoriented for time. She grew worse. February 12, the temperature rose to 102, and on the 13th it ranged from 103.2 to 105.6, with a pulse rate of 140 to 150. Toward evening, she developed a marked respiratory difficulty with signs of pulmonary edema, and died.

Necropsy.—This was held, eleven hours after death, by Dr. B. O. Raulston, who made the anatomic diagnosis of: Marked edema and hyperemia of the lungs; hyperemia and cloudy swelling of the heart muscle, liver and kidneys; marked generalized cyanosis; pregnant uterus—about the seventh month. Extensive petechial hemorrhages in the visceral pleura, the epicardium, the renal pelves, the urinary bladder and the stomach, in both the mother and the fetus; mild tracheitis and bronchitis; acute hyperplasia of the spleen; edema and hyperemia of the brain; blood-stained, frothy fluid in the mouth and nose; mild atheromatous sclerosis of the aorta; slight edema of the ankles; edema and bluish discoloration of the external genitalia; lactating mammary glands; redundant sigmoid; cholelithiasis; healed calcified tuberculous tracheobronchial lymphadenitis; fenestrated thebesian valve and membranous eustachian valve; retrocecal appendix.

After formaldehyd hardening of the brain, the pia showed marked congestion and engorgement of the veins, but there was no exudation. The brain itself was distinctly edematous, as shown by the even, semicircular outline of the cut surfaces after formaldehyd hardening. The gyri were swollen and flattened, and the sulci narrow and compressed. The cut surfaces showed marked congestion, especially in the white matter of the centrum ovale and the basal ganglions. Minute hemorrhages were made out in these regions, as well as in the upper part of the pons. In the cerebellum the congestion was relatively less striking. The ventricles and their ependyma were of normal appearance.

Sections from the congested portion of the white matter of the left frontal lobe showed marked distention of the vessels, particularly the veins, but there were only very small lymphocytic infiltrations around some of the smallest vessels. In only a few places were any extravasations of blood to be seen, and these were of small size. The number of leukocytes in the lumen of the congested vessels was small with the exception of one small vein, cut longitudinally, which contained a fresh thrombus consisting of shadows of red cells and leukocytes, about half of which were observed to be polymorphonuclear.

In the left motor cortex the pia was very loose in texture, with slight increase in cells, and there was no definite sign of inflammation in the cortex itself.

The left optic thalamus showed very extensive inflammation, with large collections of mononuclear cells about the distended vessels, large and small (Fig. 1). No large hemorrhages were seen. In the right corpus striatum a similar condition prevailed (Fig. 2).

Sections made at three levels of the pons all showed very marked inflammatory change which was most pronounced in the dorsal portion (Fig. 3). Throughout the pons, small hemorrhages were numerous. The largest one encountered is shown in Figure 4.

Sections of the bulb, made at two levels, failed to show any inflammatory changes.

No organisms were found in sections from the regions mentioned, stained by the Gram-Weigert method.

Case 3.—*History.*—A girl, aged 13 years, first seen, February 14, with Dr. L. W. Sauer, had complained, February 1, of buzzing in the ears and soreness in the jaws, so that mumps was at first suspected. A few days later, the eyes and throat became red; the temperature rose to 102, February 10, and influenza was suspected. The patient had no headache, and was unusually drowsy toward evening. The leukocyte count, February 11, was 12,200, and February 13, 11,800. February 11, the tongue seemed thick and the speech became indistinct. There began to be difficulty in swallowing on the 13th.

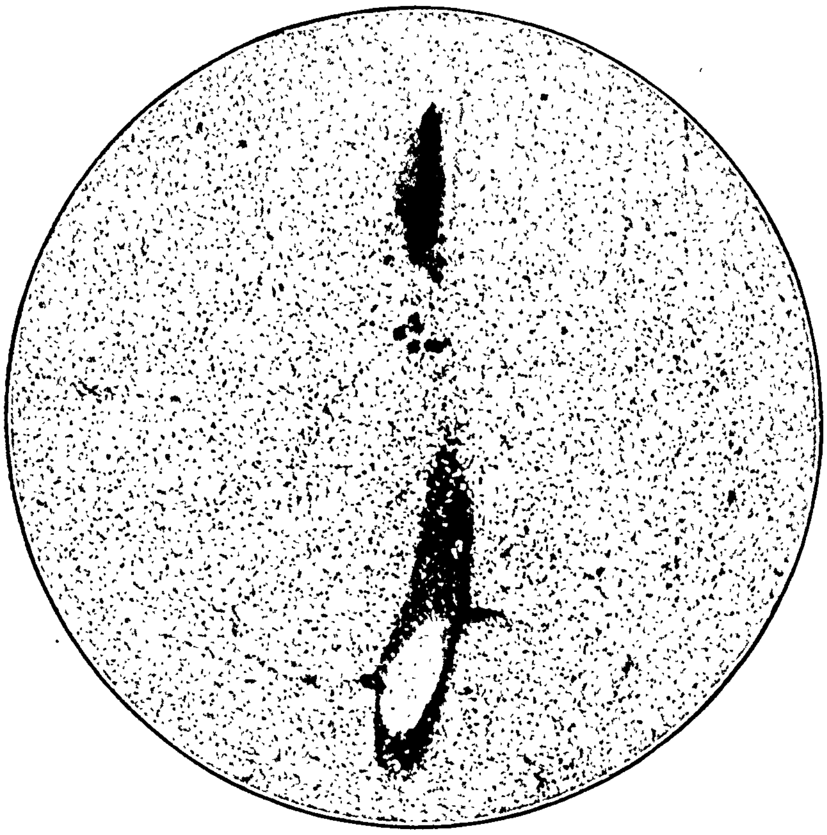

Fig. 3 (Case 2).—Pons: round cell infiltration and hemorrhage about vessel cut longitudinally; × 54.

Examination.—The patient was very drowsy and listless, with immobile face and a peculiar fixed puckering of the lips, which persisted. There was slight bilateral facial weakness. The tendon reflexes were increased, more so in the left leg, and there was suggestion of a left Babinski sign. Lumbar puncture was made, and although there was considerable difficulty in entering the canal, the patient seemed to pay no attention. The fluid was under normal pressure, with a slight accidental admixture of blood. A second puncture yielded a clear fluid with the cell count of 7. No organisms were obtained in smears or cultures. Blood cultures were also negative.

Clinical Course.—The patient was taken to the Evanston hospital the same day and gradually grew worse, with increasing rigidity of the entire body. Nystagmus became a marked feature. From February 17 on she was unable to swallow and had to be fed by nasal tube. The temperature during the first week in the hospital ranged from 99 to 100 and the pulse from 100 to 120, but on February 20 the temperature reached 101.2 and on the 23d, 103. The lethargy was more pronounced, but consciousness was retained. On the 23d a left Babinski sign was obtained, and the left extremities were more rigid than the right. The abdominal reflexes were present. During the following two weeks there was very little change. The temperature was practically always between 100 and 101, and the pulse between 120 and 140. The head was constantly kept turned to the right. Every day the patient had attacks of jerkings in the extremities, together with profuse perspiration and usually some irregularity of the pulse. She could not talk, swallow or open the mouth, but seemed to understand everything and followed an object with her eyes. The muscular rigidity resembled that of a cataleptic state and could be somewhat overcome by passive movement.

For the first two weeks she had to be catheterized, and during this time constipation was so extreme that even nine drops of croton oil and enemas were unsuccessful. Later the urine was voided involuntarily, and the bowels readily moved by enema.

Case 4.—*History.*—A married woman, aged 44, seen with Dr. Rufus Stolp, Feb. 15, 1919, had always enjoyed good health; but early in January she had some indisposition with fever for which, however, she did not consult a physician. She never was quite well from this time on, and after the middle of January she gradually grew listless, weak and unsteady, with a tendency to stiffness of the extremities and dragging of the right foot in walking.

Examination.—When seen, February 15, the patient was sitting in a chair with an absolutely listless, expressionless facial appearance, the eyes being half closed. She was clear mentally, but volunteered no remarks and answered questions only in monosyllables. The temperature was normal, but the pulse rate was 132. In addition to partial ptosis, there evidently was decided weakness of the facial muscles on both sides. The shutting of the left eye was particularly weak; otherwise there was no definite paralysis. The arms and legs were moderately stiff, the stiffness being more pronounced on the right side. The tendon reflexes were practically normal, and there was no Babinski sign. When a lumbar puncture was made, the patient was utterly indifferent and gave no expression of any discomfort. The fluid was clear and under normal pressure.

Laboratory Tests.—The Wassermann test with the blood was weakly positive with the cholesterinized antigens. The spinal fluid gave a negative Wassermann test, cell count 9, and very weakly positive Nonne-Apelt globulin test and Lange coloidal gold test (1221110000).

Dr. Stolp kindly informed me that the patient's condition at first remained unchanged, then grew slowly worse with increasing stiffness of the extremities and coarse jerkings on attempted movement. There was no special difficulty in talking or swallowing. The bowels were obstinately constipated; February 21, retention of urine set in. February 23, when broth was fed to her with a spoon, she suddenly choked. Up to this time she had been clear mentally and had talked fairly well. She rapidly developed signs of pulmonary edema, and died in two hours.

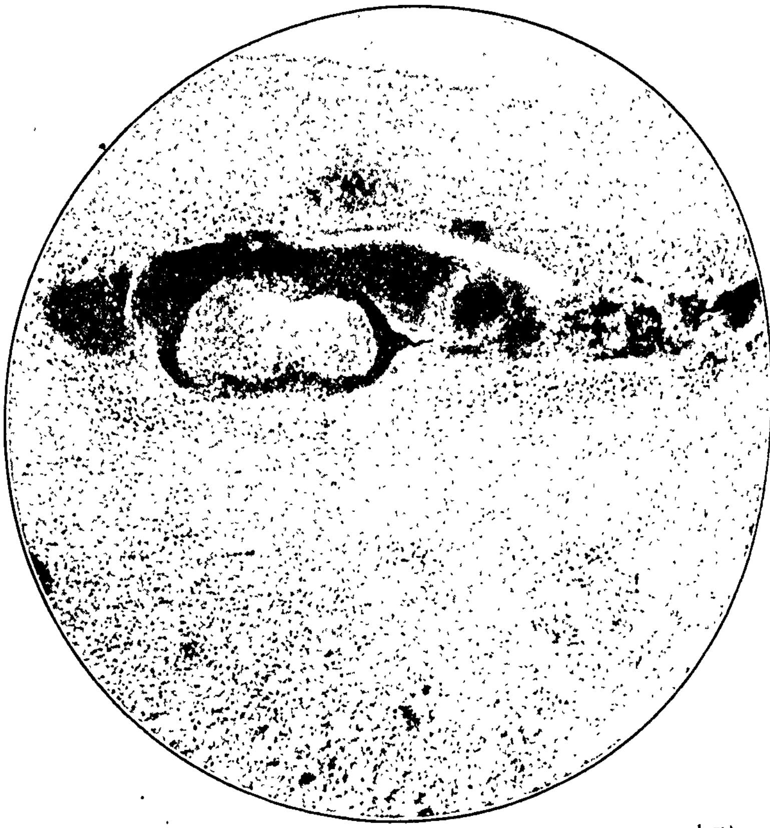

Fig. 4 (Case 2).—Pons: large hemorrhage about vessel near ependyma of fourth ventricle; × 60.

Necropsy.—This was held four hours after death by Dr. B. O. Raulston, who made the anatomic diagnosis of edema and hyperemia of the brain; moderate edema and hyeremia of the lungs; hyperemia of the liver, spleen and kidneys; petechial hemorrhages in the visceral pleura, the epicardium, the lining of the stomach and renal pelves; moderate reddening of the lining of the trachea and main bronchi; atheromatous patches in the lining of the abdominal portion of the aorta; small cysts of the left ovary.

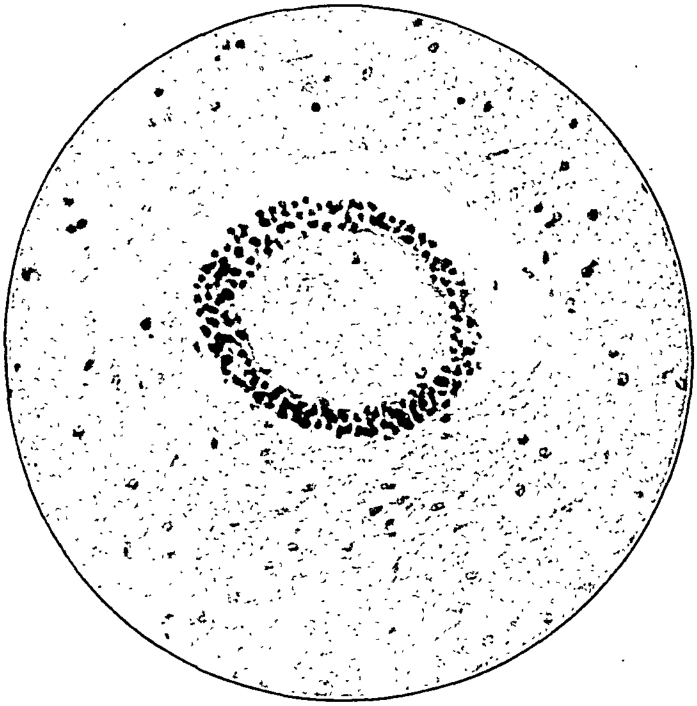

Fig. 5 (Case 4).—Corpus striatum: infiltration of mononuclear cells around distended vein; × 280.

After formaldehyd hardening of the brain, the meninges showed no changes except hyperemia. The general appearance of edema was present. Considerable hyperemia was apparent on the cut surfaces, especially in the region of the basal ganglions and the pons. The subthalamic region was the one most affected. The cerebellum showed no marked change.

Histologic examination of the frontal and parietal lobes detected no signs of inflammation in the pia or the cortex. In the occipital lobe there was slight lymphocytic increase in places, but no distinct infiltrations. In the sulci the pia and adjacent cortex were very edematous. The optic thalamus showed distended vessels surrounded by accumulations of mononuclear cells. The lenticular nucleus showed distinct but less intense inflammation (Fig. 5). The crus cerebri showed a much more intense inflammation, with very large and numerous cell infiltrations (Fig. 6). The midbrain at the anterior end of the aqueduct also showed marked inflammation (Fig. 7). Throughout the pons, especially the dorsal portion, there were intense congestion, hemorrhagic areas and perivascular infiltrations, but the latter were less conspicuous than in the midbrain and basal ganglions. In the bulb, well marked congestion and inflammation were present, especially dorsally, in the region of the vagus nuclei (Fig 8). No bacteria were seen in sections stained by the Gram-Weigert method.

CASE 5.—*History.*—A man, aged 40, admitted to the Presbyterian Hospital, Feb. 20, 1919, from his home in Iowa, had begun, February 9, to complain of diplopia, which lasted only two days, but he felt ill and on the 14th summoned a physician, who found that his temperature was 103. It was 102 on the 15th and 101.6 on the 16th. On that day, stiffness in the fingers of the left hand and slight difficulty in talking were noted. On the 17th the temperature was normal, but the patient developed retention of urine, and stiffness in the jaws and in the fingers of the right hand. There was no headache nor other pain. He had not been constantly confined to bed until admitted to the hospital.

Examination on Admittance.—The patient was listless and very quiet, but clear. He kept the eyes half closed and did not volunteer any conversation or movement. The neck was quite stiff; the pupils and eyegrounds were normal; there was no ocular paralysis. There was apparently bilateral facial weakness, as the eyes could not be firmly closed or the teeth shown, nor could the patient whistle. The jaw was stiff, but with great effort the patient could separate the teeth about 3 cm. In biting, the muscles of mastication seemed to be weak. The tongue was tremulous and could not be protruded beyond the lips; there was no atrophy. The arms and legs were rigid, more so on the left side, but they could be fairly well relaxed by passive movements. The patient could move all the extremities but did so very slowly, with apparently great effort, and in a jerky manner, the effort resembling that of a catatonic patient. There was a constant tendency to hold the finger tips close together and slightly overlapping, with partial flexion at all joints. When he folded his arms on his chest they showed coarse jerkings, and when he sat up with the arms across the chest he was able to raise the head only a few inches. With the aid of the hands he could sit up, but the effort resulted in a coarse tremor in the muscles of the arms, trunk and the left leg. All of the tendon reflexes were moderately increased, without clonus. The plantar and abdominal reflexes were normal. Sensation was normal.

Lumbar puncture revealed a clear fluid under moderately increased pressure. The Wassermann test was negative. The cell count was twenty-six (mononuclear cells). The Nonne-Apelt globulin test was weakly positive; the Lange colloidal gold test gave a weak reaction (0112111000). The Wassermann test with the blood was also negative.

Blood examination revealed: hemoglobin, 80 per cent.; red cells, 3,840,000; white cells, 9,200.

Clinical Course.—During the following days the general rigidity and tendency to jerkiness on any attempted movement increased. There was a typical "cog wheel" resistance on passive movement of the elbows. The patient remained clear but extremely listless. The speech became more unintelligible, but he had no difficulty in swallowing until a few days before death.

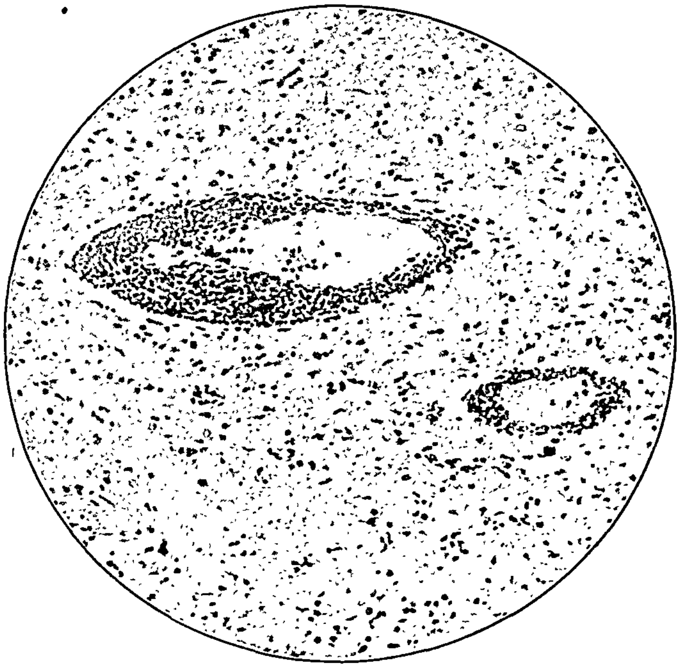

Fig. 6 (Case 4).—Right crus cerebri: dense perivascular cell infiltrations; × 60.

Though the stupor increased, the patient did not sleep well, waking up frequently during the night. February 24, drooling became marked and the breathing labored, but examination of the chest was negative. Perspiration became profuse and an extensive sudaminal rash appeared. After March 1, catheterization was not necessary, as the urine was voided involuntarily. A second lumbar puncture, March 3, also yielded a clear fluid, with a cell count of 20, and weakly positive Nonne and Lange tests. Cultures of blood and spinal fluid were made by Dr. Ruth Tunnicliff both by aerobic and anaerobic methods, but no growth was obtained. From February 20 to the 24th the temperature varied from 98 to 100.6 F., but from that time on it gradually rose, reaching 102, February 28, 104, March 2, 105, March 6, and 107, 6 a. m. March 8. The pulse rate showed a corresponding increase, being generally 120 until March 2, and after that from 120 to 140. The respirations showed similar behavior and were from 36 to 48 a minute after March 1. After March 4 there were frequent attacks of dyspnea and choking. In the afternoon of March 8 the pulse became imperceptible, the respirations very shallow and cyanosis marked. The patient died at 5:30 p. m. Necropsy was refused.

Case 6.—*History.*—A married woman, aged 42, seen Feb. 24, 1919, with Dr. Yorke B. Sutch, previously had been well except for migraine. Her husband had influenza in October, 1918, but she escaped. At Christmas time she began to complain of occasional tinnitus; otherwise she was well until about February 1, when she consulted Dr. Sutch on account of shortness of breath and a rapid pulse. She went to bed the next day, and for a few days the temperature went up to 102. Then indistinctness of speech and difficulty in swallowing set in. The temperature was rarely above 100, but the pulse rate was from 110 to 120. She perspired considerably at night, and occasionally complained of pain in the left calf; and the left leg became a little rigid. There was marked tremor in the tongue and a little in the hands. From February 8 on, she had to be catheterized every day. February 15, lumbar puncture was made. The fluid was clear, under normal pressure. It contained 25 lymphocytes per cubic millimeter, and gave a positive Nonne globulin test and an almost negative Lange test. The Wassermann test was negative with both blood and spinal fluid.

Examination.—When I saw the patient, February 24, the temperature was 99.6, pulse 110, respiration 38. She was clear mentally. There was no distinct ocular palsy, but movements of the eyes could apparently be made only with great effort. There was weakness of the facial muscles of both sides, more on the right. The tongue was tremulous and could be protruded only a short distance. There was considerable general muscular rigidity, most marked in the left leg; but the tendon reflexes were normal as well as the plantar reflexes. Sensation was normal. Within a few days she began to improve. Swallowing became better and the urine was voided normally. The most troublesome symptom was the coarse, almost choreic jerkings in the left leg. This condition always yielded temporarily to hypodermics of scopolamin. The temperature remained below 99, but the pulse rate at the time of the last communication from Dr. Sutch, March 17, continued to be rapid, up to 120.

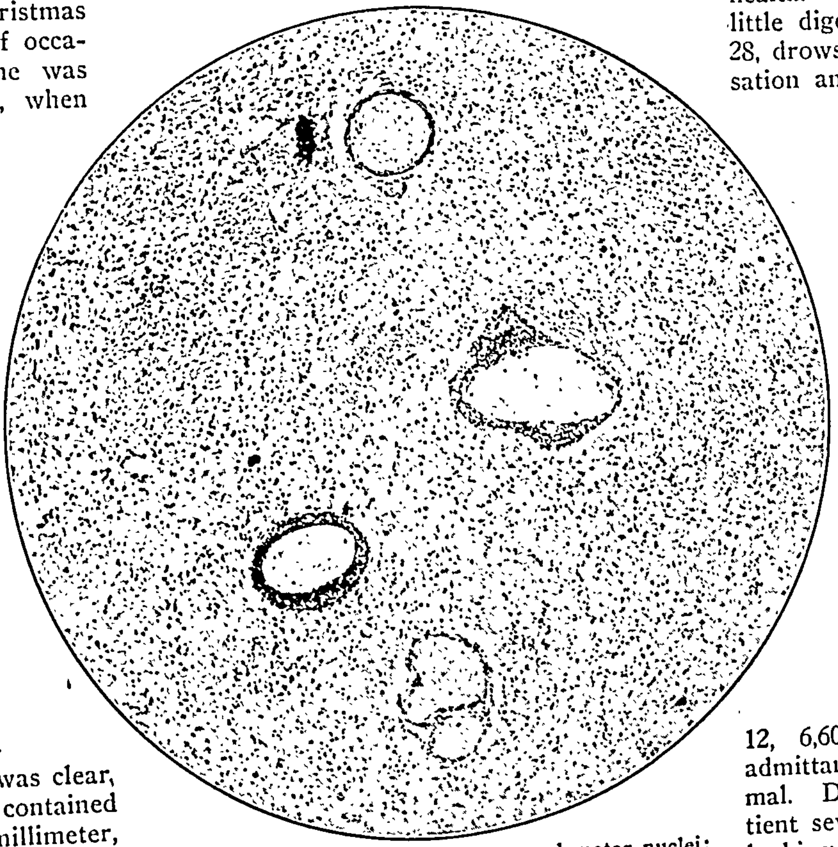

Fig. 7 (Case 4).—Midbrain near oculomotor nuclei: cell infiltration about the engorged vessels; × 60.

Case 7.—An unmarried woman, aged 34, seen at the Evanston hospital, March 11, 1919, with Dr. Rufus Stolp, ten days previously had felt feverish and complained of double vision. On the 8th she had made a trip to Chicago to have her eyes examined. On admittance to the hospital on the 11th, the temperature was 99.6, pulse 80, respiration 24. She was conscious, but very lethargic and with a dull facial expression. There was no definite ocular palsy, but the eye movements were slow. The eyegrounds were normal; there was no nystagmus. There was only slight rigidity of the neck and arms, but the legs were very decidedly rigid. They showed only slight increase in the tendon reflexes and normal plantar reflexes. The abdominal reflex was not obtained in the left lower quadrant, and was weak in the other quadrants. Sensation was normal.

The spinal fluid gave a negative Wassermann test but showed slight increase in globulin. No cell count was made.

March 12, the lethargy was more marked and the arms and neck were more rigid. The temperature ranged from 98 to 101. The patient had to be catheterized nearly every day and grew duller and stiffer until March 16. When examined on that day, she was considerably brighter, and the rigidity in the legs was diminished and that in the arms was very slight. The tendon reflexes were normal.

Case 8.—A man, aged 62, seen, March 13, 1919, with Dr. E. F. Wells, for ten years had shown symptoms of intermittent claudication of the legs, but otherwise had been in good health. Early in January, he had a little digestive disturbance. January 28, drowsiness set in, with dizzy sensation and slight unsteadiness. The eyes became sensitive to light, and on February 5, lateral diplopia appeared which lasted one day and later recurred at times. He also complained of slight respiratory distress, a little trouble in talking, drooling and, during the last two days, incontinence of urine. He had not been confined to his bed prior to admittance to St. Luke's Hospital, March 10. March 11, lumbar puncture revealed the fluid clear, Wassermann test negative, globulin test positive, cell count 4. The blood gave a negative Wassermann reaction. March 10, there was a leukocyte count of 4,800 and on March 12, 6,600. The temperature after admittance to the hospital was normal. During the interview, the patient several times saw double when looking to the right. He appeared alert and talked freely. The abdominal reflexes and the left knee and ankle reflexes were not obtained. The arm reflexes were normal. There was no definite paralysis. Sensation was normal.

March 22, Dr. Wells reported that the patient had become somewhat dull mentally, and that his legs had grown weaker. Otherwise, no new symptoms had developed.

Case 9.—A married woman, aged 34, seen at the Evanston hospital, March 12, 1919, with Dr. C. A. Aldrich, was said to have been somewhat anemic but otherwise well until March 3, when she felt weak and developed retention of the urine. She had a smothering sensation, and the eyes were sensitive to light. The temperature during the following days ranged from 99.4 to 100.4. The leukocyte count was 8,800. She generelly lay with the eyes half closed, and spoke only to answer questions. Blueness of the fingers was noted after the third day.

When the patient was examined, March 12, she was dull and drowsy, but answered questions without any special difficulty. The jaw was rather stiff, and the teeth could not be separated more than 2 cm. The neck was also slightly stiff, but the head could be turned about without pain. The knee and ankle reflexes were weak. The elbow reflexes were not obtained; the wrist reflexes were elicited only on the left side; the plantar reflexes were normal. The temperature was 101.

When seen again, March 16, the patient was brighter and showed no rigidity, but felt too tired to sit up long enough to try to urinate, and still had to be catheterized every day. The temperature since the 12th had usually been 99.5. Both wrist reflexes were now obtained as well as the right elbow reflex. The tendon reflexes in the legs were normal.

Case 10 presents both features of encephalitis and a confusional psychosis.

Case 10.—A man, aged 39, seen at the Caledonia (Minn.) hospital, March 6, 1919, with Dr. W. S. Browning, two and a half weeks previously, when feeling tired and nervous, had left his home in Illinois for a visit in Minnesota. After a few days, he became more tired, said he had no energy, and complained of poor sleep. He began to complain of backache and blurring vision: he said he could see better with one eye closed. February 26, he became confused and irrational. He was admitted to the hospital, March 2, with temperature 103, pulse 70, and respiration 16. From that time on the temperature gradually declined, and was 99.6, March 6. Most of the time he was in a state of muttering delirium and talked continually. On the morning of March 6, he was less delirious but rather drowsy.

When examined in the afternoon, March 6, he answered questions fairly promptly, but was disoriented as to time and place. There was no speech disturbance, but a slight weakness of the left external rectus was present. There was no other cranial nerve palsy. The strength in the extremities was good, and there was no rigidity. The right abdominal reflex was not obtained. The wrist, elbow, knee and plantar reflexes were normal; the ankle reflexes were moderately increased. Lumbar puncture yielded a clear fluid with negative Wassermann reaction, cell count 9, and Nonne globulin test weakly positive. The Lange gold test gave a weak but distinct reaction (0122110000).

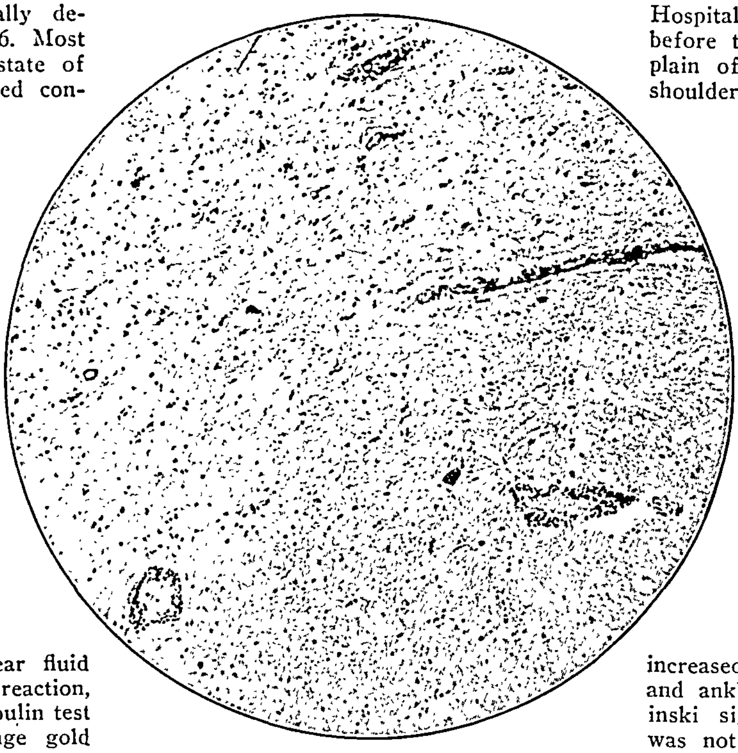

Fig. 8 (Case 4).—Lower bulb: perivascular infiltrations; × 90.

March 18, Dr. Browning reported that the patient's general condition had somewhat improved. His orientation was good. There was no more diplopia, but slight unilateral facial paralysis existed. The maximum daily temperature was 100. The patient was still inclined to be somnolent, but could easily be aroused.

Case 11 differs from the others by the absence of somnolence after the first few weeks, and the presence of violent choreiform jerking limited to one extremity.

Case 11.—A woman, aged 33, seen, March 9, 1919, with Dr. W. K. Harrison, about January 20, after having felt tired for a week, had been suddenly taken ill with sore throat and fever, her temperature reaching 103. January 21, she became extremely drowsy, and on the next day delirious, giving voice to many absurd delusions, among them the idea that her left leg was not her own but belonged to her niece. During the first week, blisters containing bloody fluid appeared on both heels. By the middle of February the fever and somnolence subsided, and the chief trouble from now on consisted of irregular, jerky movements in the left lower extremity, beginning in the toes and involving the whole limb after three or four days. The movements ceased entirely during sleep. Headache, visual disturbances and sphincter disturbances were absent.

March 10, she was admitted to my service at the Presbyterian Hospital.

Neurologic examination was practically negative, except for continuous choreic movements of large amplitude in the left leg. On making lumbar puncture, a clear fluid under moderately increased pressure was obtained. It gave a cell count of 10, a weakly positive Nonne-Apelt globulin test, and a weak colloidal gold reaction (1222110000). During the following ten days the choreic movements became less severe. Scopolamin hydrobromate and sodium cacodylate were administered.

While none of the previous patients gives a history of a definite attack of influenza, such a history was obtained in Case 12, which, however, is not one of the lethargic, or brain stem, type of encephalitis but of the hemispheral variety.

Case 12.—A boy, aged 14 years, had had an attack of influenza one month prior to admittance to the Presbyterian Hospital, Dec. 5, 1918. Ten days before this date, he began to complain of pain in the left arm and shoulder. When he came to the hospital it was found that his temperature was 101, and a diagnosis of a second attack of influenza was made. The attack was mild, and on December 11 he was transferred to my service on account of the trouble with the left arm, which had grown a little better during his stay in the influenza ward. He showed no somnolence. The right pupil was larger than the left; there was no external ocular or other cranial nerve palsy. The movements of the fingers of the left hand were relatively weak; the strength in both legs was good. The tendon reflexes were increased in the left leg, with knee and ankle clonus and positive Babinski sign. The abdominal reflex was not obtained on the left side. The wrist and elbow reflexes were not obtained on the left side. The spinal fluid was entirely normal. The cell count was 5, globulin negative. The condition of the patient rapidly improved, and he was discharged, recovered, January 19.

30 North Michigan Avenue.

Polyneuritis on a Cooked Lean Meat Diet.—Voegtlin and Lake of the United States Public Health Service have conducted some experiments with animals to study the nutritive value of meat subjected to the temperatures ordinarily used in cooking with reference to producing polyneuritis on account of the destruction of the antineuritic vitamin. Polyneuritis was produced in cats and dogs as the result of an exclusive dietary of lean beef which was heated for three hours at 120 C. in the presence of alkali (sodium carbonate). The symptoms produced were those characteristic of beriberi. Administration of the antineuritic substance of yeast was followed by the prompt disappearance of the symptoms. Exposure of the beef for three hours to a temperature of 120 C. without the previous addition of the alkali does not completely destroy the antineuritic power of this food. It is therefore concluded that the ordinary preparation of meat for human consumption does not lessen its food value in this respect.

INFLUENZA OCCURRING IN PREGNANT WOMEN

A STATISTICAL STUDY OF THIRTEEN HUNDRED AND FIFTY CASES *

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BALTIMORE

In the latter part of October, 1918, when the epidemic of influenza was at its peak in this locality, the seriousness of the disease as seen in pregnant women caused considerable alarm among those in charge of obstetric cases. It soon became apparent that there was a great diversity of experience as regards the mortality, some of the practitioners losing most of their cases, others very few. In addition to its importance in contributing toward a more definite knowledge concerning the prognosis of influenza in pregnant women, it has seemed to me that a statistical study based on a large number of cases would also be of value in showing the effect of the influenza on the course of pregnancy. Owing to its severity and wide occurrence, and to the fact that it was especially prevalent among young women of the child-bearing age, the epidemic offered the best opportunity we have perhaps ever had to study the extent to which the progress of pregnancy is interfered with by an acute, severe, infectious disease.

With these purposes in view, a questionnaire was prepared which included data as to race and age of the individual patient, the month of pregnancy, character of the attack (whether mild or severe, and whether complicated by pneumonia), recovery or death of the mother, and whether or not pregnancy was interrupted. Copies of this blank were sent to all of the physicians of the state of Maryland, and also to the members of the American Gynecological Society, the American Association of Gynecologists and Obstetricians, and the local obstetric societies in four of the larger cities. I wish here to express my appreciation of the ready response on the part of the physicians who replied, and of the careful manner in which they supplied the information desired.

Of the total number of cases returned, 1,350 were reported in full detail, and it is on these that our statistics have been based. Other cases were reported but were not used, owing to incompleteness of the data in some particular respect. Of the 1,350 cases, 971 were from the state of Maryland, and hence the great majority occurred under the same general conditions. In race the patients were predominantly white, the proportion being 1,266 white, eighty-two negro, and two Japanese. Since in most instances the duration of pregnancy was expressed in calendar months, the same method has been followed in this paper.

The results of this study are given herewith in the form of a series of tables in which the statistics are presented so as to show their relation to the various aspects of our problem. By a comparative study of these tables important data are revealed, both as regards the course of influenza in pregnant women and the effect of the influenza on the course of pregnancy. No conclusions can be drawn, however, as to whether the incidence of influenza is greater among pregnant women than among nonpregnant women or men of the same age. This question cannot be determined until we have reliable statistical data concerning influenza in general. Our own figures show only what happened in this group of 1,350 patients.

TABLE 1.—INCIDENCE OF PNEUMONIA AND PERCENTAGE OF MORTALITY IN CASES OF INFLUENZA REPORTED FOR THE DIFFERENT MONTHS OF PREGNANCY

Month of Pregnancy	Uncomplicated by Pneumonia			Complicated by Pneumonia				Total Cases	Gross Mortality
	No. of Cases	Recovered	Percentage of Mortality	No. of Cases	Recovered	Died	Percentage of Mortality		
1	12	12	0	2	1	1	50	14	7
2	53	53	0	31	17	14	45	84	17
3	58	58	0	68	32	36	53	126	28
4	79	79	0	79	41	38	48	158	24
5	58	58	0	94	51	43	46	152	28
6	94	94	0	88	43	45	51	182	25
7	121	121	0	114	47	67	59	235	29
8	151	151	0	109	45	64	59	260	25
9	46	46	0	93	36	57	61	139	41
Total	672	672	0	678	313	365	54	1,350	27

As regards the course and prognosis of influenza in pregnant women, we may draw certain general conclusions from Table 1. Our first observation is that about one half of all the patients developed pneumonia, and of these about 50 per cent. died, giving a gross mortality of 27 per cent. In those developing pneumonia, the mortality was somewhat higher in the last three months of pregnancy. From Table 1 it will be seen that the largest number of cases were reported for the sixth, seventh and eighth months, and fewer from the third to the fifth months. As to the first two months, we must assume that in many instances the existence of pregnancy was not suspected by the attending physician, and thus such cases would not be included in the reports. On the other hand, we may well reason that cases from the later months were likely to be reported, pregnancy being then more obvious. This would explain the larger number of

TABLE 2.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN CASES IN WHICH INFLUENZA WAS UNCOMPLICATED BY PNEUMONIA

Month of Pregnancy	Total Cases	Pregnancy Uninterrupted	Pregnancy Interrupted	Percentage Interruption
1	12	8	4	33
2	53	27	26	49
3	58	40	18	31
4	79	55	24	30
5	58	46	12	21
6	94	81	13	14
7	121	95	26	21
8	151	108	43	28
Total	626	460	166	26

TABLE 3.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN CASES IN WHICH INFLUENZA WAS COMPLICATED BY PNEUMONIA

Month of Pregnancy	Total Cases	Pregnancy Uninterrupted	Pregnancy Interrupted	Percentage Interruption
1	2	0	2	100
2	31	7	24	77
3	68	29	39	57
4	79	43	36	46
5	94	59	35	37
6	88	47	41	46
7	114	57	57	50
8	109	41	68	62
Total	585	283	302	52

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*From the Johns Hopkins Hospital and Carnegie Laboratory of Embryology.

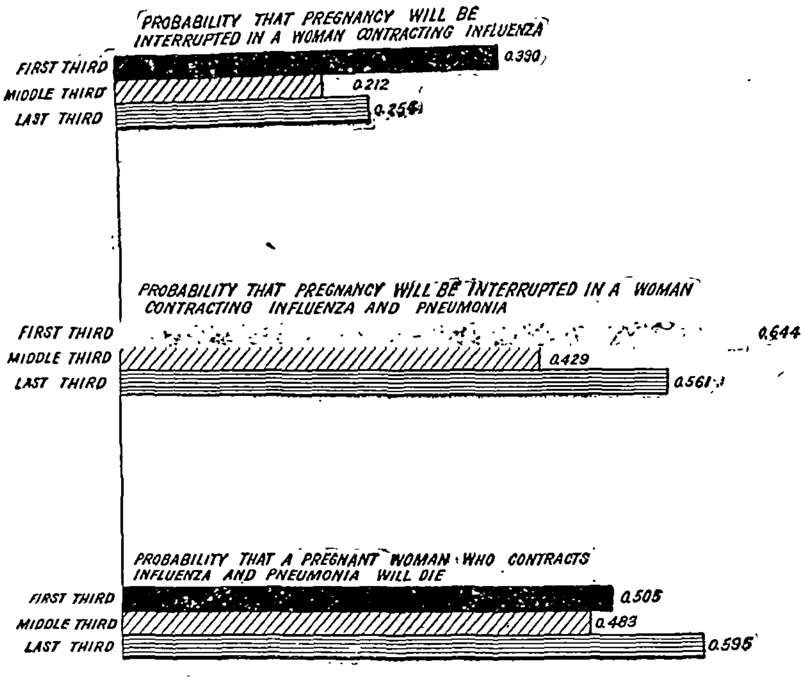
cases reported for that time. We may safely conclude that the individual is no more susceptible to the disease at any one month of pregnancy than at another.

As regards mortality, the percentage is distinctly higher in the last three months of pregnancy. Sixty per cent. of the cases developing pneumonia in those months proved fatal; in the ninth month it reached its highest point, 61 per cent. When considered as gross mortality the percentage is reduced somewhat, owing to the large number of cases reported for this period.

The effect of influenza on the course of pregnancy is shown in Tables 2, 3 and 4, in which the frequency of coincident abortion or premature birth is tabulated according to the severity of the influenza. In the 626 cases uncomplicated by pneumonia the pregnancy was interrupted in 26 per cent., the ratio being somewhat higher in the first three months. This figure is not greatly in excess of the frequency one would expect under ordinary conditions. Moreover, it is to be remembered that many of these abortions might have occurred in the absence of the disease, or at least that the disease may have served only as a terminal factor in bringing about the abortion of an ovum already pathologic. In the cases complicated by pneumonia, the frequency of interruption of pregnancy is doubled, being 52 per cent. in 585 cases. If we disregard the first two months, the percentage is still higher, termination of pregnancy occurring in 62 per cent. of 308 cases. In view of the popular opinion that the presence of influenzal pneumonia nearly always causes an interruption of pregnancy, it is of interest to note the surprising fact that in 38 per cent. of the fatal cases cases the patients died without interruption of pregnancy. This would indicate that when the ovum and the placentation are normal, an extremely severe disturbance in the condition of the mother may be required in order to bring about the termination of pregnancy.

TABLE 4.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN FATAL CASES

Month of Pregnancy	Number of Deaths Reported	Pregnancy Uninterrupted		Pregnancy Interrupted	
		No.	Per Cent.	No.	Per Cent.
1....................	1	...	..	1	100
2....................	14	5	36	9	64
3....................	36	10	28	26	72
4....................	38	13	34	25	66
5....................	43	21	49	22	51
6....................	45	20	44	25	56
7....................	67	28	42	39	58
8....................	64	20	31	14	69
Total..............	308	117	38	191	62



Probabilities with respect to pregnant women contracting influenza or influenzal pneumonia.

TABLE 5.—RELATION OF INTERRUPTION OF PREGNANCY TO MORTALITY

Month of Pregnancy	Pregnancy Not Interrupted			Pregnancy Interrupted		
	Cases	Deaths	Percentage of Mortality	Cases	Deaths	Percentage of Mortality
1............	8	..	..	6	1	17
2............	34	5	15	50	9	18
3............	69	10	15	57	26	46
4............	98	13	13	60	25	41
5............	105	21	20	47	22	47
6............	128	20	16	54	25	46
7............	152	28	18	83	39	47
8............	119	20	13	111	44	40
Total......	743	117	16	468	191	41

The reverse of Table 4 is presented in Table 5, in which the data are so arranged as to show the effect of abortion and premature labor on the incidence of mortality. In 743 patients in whom pregnancy was not interrupted, there was a mortality of 16 per cent. In 468 cases in which there was termination of pregnancy, the mortality was 41 per cent. This distinctly higher percentage is consistent throughout the different stages of pregnancy with the exception of the first two months; but, as already pointed out, the number of cases in those months is too small to warrant any definite conclusions. It is plainly evident that the interruption of pregnancy renders the prognosis more grave. If we restrict our data to the cases that were complicated by pneumonia, it is found that in the 383 cases in which pregnancy was not interrupted, the mortality was 41 per cent.; whereas in 395 cases in which pregnancy was interrupted there was a mortality of 63 per cent.

It may be of interest to present the same statistics in another form, which has certain advantages from the point of view of accurate comparisons. One can calculate the mathematical probability of certain types of occurrence in the general "universe of discourse" comprehended by these statistics. By elementary theory of probability, it is known that if an event may happen only in one or the other of two ways, a and b, and in n trials it actually happens m times in one particular way, a, then the probability (p) of its occurrence in that way may be thus expressed: $p = \frac{m}{n}$, and the probability (q) of its occurrence in the other way, b, would be expressed $q = 1 - p$.

Applying this principle to the present statistics, and grouping the material, we get the results shown in Tables 6, 7 and 8, and in the chart, which have been prepared for me through the kindness of Dr. Raymond Pearl of the School of Hygiene and Public Health.

From these tables we note that, so far as may be judged from the present statistics, the chances of the interruption of pregnancy are about doubled if the woman contracts both influenza and pneumonia, over what they are if she has influenza alone. It is the general impression of obstetricians that normally, and without known complications, the chance is about 1 : 5 that pregnancy will be interrupted. The data in Table 6 indicate that the normal chance of the interruption of pregnancy is not greatly increased by the presence of influenza alone. The chance of death from influenza complicated by pneumonia is obviously greatly increased by the interruption of pregnancy.

TABLE 6.—DEGREE OF PROBABILITY THAT THE PREGNANCY OF A WOMAN WHO CONTRACTS INFLUENZA UNCOMPLICATED BY PNEUMONIA WILL BE INTERRUPTED

If the Influenza Attack Is in the:	Probability of Interruption	Chance of Interruption Is One in:
First third of pregnancy....................	0.390 ± 0.03	2.6
Middle third of pregnancy..................	0.212 ± 0.018	4.7
Seventh and eighth months of pregnancy	0.254 ± 0.018	3.9

As this paper was about to be submitted for publication, two others appeared, dealing with the statistical relation of influenza to pregnancy. Bland[1] reports 337 cases. In a study of 200 of these he gives a mortality of 49 per cent. This is somewhat higher than is yielded by our larger number of cases in which, as has been seen, we have a total mortality of 27 per cent. As to the effect of the disease on pregnancy, Bland reports the interruption of pregnancy in 58 per cent. of his cases, a figure considerably higher than that shown by our data, which is 39 per cent. in 1,211 cases falling within the first eight months.

TABLE 7.—DEGREE OF PROBABILITY THAT THE PREGNANCY OF A WOMAN WHO CONTRACTS INFLUENZA AND PNEUMONIA WILL BE INTERRUPTED

If the Influenza Attack Is in the:	Probability of Interruption	Chance of Interruption Is One in:
First third of pregnancy....................	0.644 ± 0.032	1.6
Middle third of pregnancy..................	0.429 ± 0.021	2.3
Seventh and eighth months of pregnancy	0.561 ± 0.022	1.8

Attention may also be called to the paper of Kosmak,[2] in which is given a summary of twenty-one hospital cases studied by him, in addition to several private cases. This author has kindly permitted me to use his data, and they are incorporated in the foregoing statistics.

TABLE 8.—DEGREE OF PROBABILITY THAT A PREGNANT WOMAN WHO CONTRACTS INFLUENZA AND PNEUMONIA WILL DIE

If the Influenza Attack Is in the:	Probability of Death	Chance of Death Is One in:
First third of pregnancy....................	0.505 ± 0.034	2.0
Middle third of pregnancy..................	0.483 ± 0.021	2.1
Last third of pregnancy and at term.....	0.595 ± 0.019	1.7

RESULTS OF THE STUDY

It is assumed that the 1,350 cases on which these statistics are based were serious enough to require medical attention, and do not include the very mild cases; nor do they include many of the cases falling within the first two months of pregnancy, when gestation might easily escape the knowledge of the physician. With these reservations, the results of the study are as follows:

1. Pneumonia complicated the influenza in about one half of the pregnant women here reported.
2. In the cases complicated by pneumonia, about 50 per cent. of the patients died, the mortality being somewhat greater during the last three months of pregnancy.
3. The gross mortality of all cases was 27 per cent.
4. Pregnancy was interrupted in 26 per cent. of the uncomplicated cases, and in 52 per cent. of the cases accompanied by pneumonia. In the cases ending fatally, abortion or premature labor occurred in 62 per cent. Thus, in 38 per cent. of the fatal cases the patient died without interruption of pregnancy.
5. The mortality of influenza was considerably higher (41 per cent.) in the cases complicated by abortion or premature labor than in those in which pregnancy was uninterrupted (16 per cent.).

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[1] Bland, P. B.: In[illegible]za in Its Relation to Pregnancy and Labor, Am. J. Obst. 79: 184, 1[illegible]

[2] Kosmak, G. W.: Th[illegible]currence of Epidemic Influenza in Pregnancy, Am. J. Obst. 79: 2[illegible]919.

INFLUENZA IN A NEWLY BORN INFANT

REPORT OF A CASE

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CHICAGO

Through the kindness of Dr. David S. Hillis of the Chicago Lying-In Hospital, I was permitted to examine a newly born infant whose mother showed symptoms of influenza one day previous to labor. In order to make clear the condition of the baby, I will include the history of the mother's illness, furnished by Dr. Hillis.

REPORT OF CASE

History.—Mrs. J., aged 26, a primipara, developed symptoms of influenza late in the afternoon of December 27, when she was within two weeks of term. The symptoms were *cough, fever, chilliness, headache and backache, with much* soreness in the chest. She had had no sleep during the night.

Labor pains were first noticed at 6 a. m., December 28. Influenza symptoms continued. At 2:30 p. m. the temperature was 101.2 and the patient was in active labor. The fetal heart tones were more rapid than usual, being 150 throughout labor, but they were always regular and not of a character to indicate mechanical disturbance of fetal circulation. Labor continued normally, and at 12:30 a. m., December 29 the bag of waters appeared at the vulva and was artificially ruptured. The liquor amnii was markedly stained with meconium. At 12:46 there was spontaneous delivery of a boy, whose weight was 6 pounds, 12 ounces.

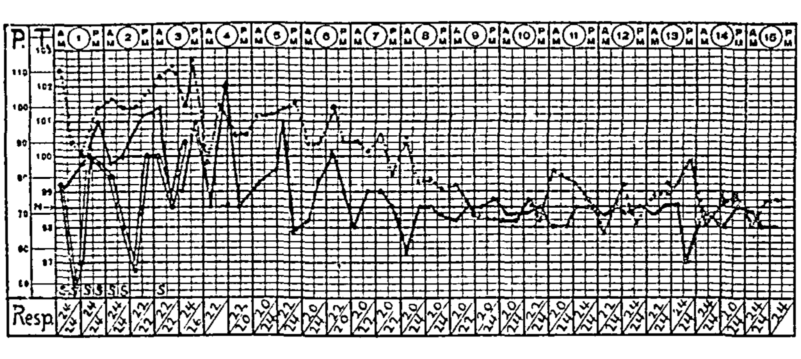
The infant's skin became grayish blue almost immediately after birth, and this condition persisted in spite of vigorous crying and clear air passages. The baby seemed vigorous at birth and breathed promptly after delivery. Auscultation of the baby's chest ten minutes after birth revealed many fine moist râles in both lungs, but there was no dulness on percussion. The following day, Decemb[illegible] 10 a. m., the baby was put to the breast and nurse[illegible] after this, however, the breathing became [illegible] rapid. At 11 p. m. of this day, the respiration r[illegible] perature was not high, never excee[illegible] 97 F. The baby became more and [illegible] tions were superficial and rapid. [illegible] uttered [illegible] cry.

The [illegible] ion of the ba[illegible]'s before [illegible] wed a white[illegible] nucleated red and some large, pale white cells, not classified. The differential count was: polymorphonuclears, 58 per cent.; lymphocytes, large and small, 35 per cent.; large mononuclears, 2.8 per cent., and eosinophils, none.

December 31, the third day of the baby's life, finely crepitant râles were diffusely distributed over both lungs. Cyanosis was marked, and dyspnea extreme. The baby died at 6:05 p. m. with well marked symptoms of bronchopneumonia.

Necropsy.—The following day opening of the thorax revealed minute hemorrhages into the pericardium. The heart muscles were flabby and gave evidence of a parenchymatous myocarditis. On examining the heart valves, one could plainly see a beginning of acute verrucose endocarditis, involving the cusps of the tricuspid valve. Both lungs showed confluent areas of hemorrhagic bronchopneumonia. The spleen gave evidence of an acute splenitis with some edema and passive hyperemia. The kidneys showed no gross pathologic change, and the liver gave the appearaces of cloudy swelling.

Prof. F. Robert Zeit of the Northwestern University Medical School, Chicago, examined the tissues and organs, and reported that "the cultures made from the organs of the baby which were submitted for examination showed many colonies of streptococci. Those made from the lungs showed in addition to the streptococci, which were present in large numbers, a few colonies of *Staphylococcus aureus* and *albus*. Cultures made from the spleen showed a few colonies of *Staphylococcus aureus* and *albus* and many colonies of streptococci. The examination of the organs shows: (1) lung: capillary bronchitis; (2) kidney: glomerulonephritis and necrosis (septic); (3) spleen: acute septic splenitis." Professor Zeit concluded that the cause of death was a streptococcus septicemia.



Pulse (dotted line), temperature (solid line) and respirations of mother after delivery of child; and temperature (double line) of infant after birth; *S*, *S*, stools of infant.

Subsequent History of Mother.—The mother had a mild course of influenza without obstetric or other complications, and left the hospital fully recovered, Jan. 13, 1919.

SUMMARY AND CONCLUSIONS

1. The obstetrician's report indicates that the baby was born prematurely, owing to a maternal influenza.
2. At birth the baby presented symptoms of respiratory infection.
3. The symptoms grew rapidly and progressively worse, leading to the death of the infant on the third day.
4. The necropsy revealed a widely disseminated infection, with minute hemorrhages and a hemorrhagic bronchopneumonia, as well as a septic endocarditis.
5. Streptococci were obtained abundantly from all of the organs examined.
6. We must assume that the baby became infected before birth.

Pain.—Pain is the oldest defense reaction, and potentially painful stimuli are the basis of all primitive reflexes. It is therefore of importance for higher development that these impulses should be rendered less effective in favor of those impressions which lead to more general and discriminative response. But, although they are controlled and even abolished, the mechanism underlying the production of pain must remain in full, physiologic activity, ready to play its part, should occasion arise, in the defense of the body against noxious influences.—Henry Head.

PANDEMIC INFLUENZA IN KOREA

WITH SPECIAL REFERENCE TO ITS ETIOLOGY

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AND
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The great influenza pandemic made its appearance in Korea during the month of September, 1918. There seems to be no doubt that the infection came from Europe, via Siberia. The disease spread from north to south along the line of the Southern Manchurian Railway. The first cases seen by us in Seoul, the capital, were during the latter part of September. Before the middle of October the epidemic was at its height. The insanitary conditions of oriental life greatly enhanced the spread of the infection. At present it is impossible to estimate either the number of cases or deaths, as accurate information has not been received from the Japanese authorities. From one quarter to one half of the population must have been affected. Most of the schools were closed, owing to the high incidence among the scholars and teachers. As elsewhere the serious nature of the outbreak was due to the frequent sequelae, bronchitis, bronchopneumonia and heart failure. The symptoms were those of ordinary influenza, but of a more exaggerated type. Headache, and pains and aches in the limbs, with a rapid rise of temperature to 104 or 105 were common symptoms. The temperature usually dropped to slightly above normal within twenty-four hours if the case was uncomplicated. There was also frequent evidence of respiratory infection, which varied from a mild coryza to pneumonia in severity. In some cases there was vomiting and nausea, while in some very acute cases the patient became delirious at the climax of the infection. The symptoms in general corresponded with those reported from other countries.

With regard to transmission of the disease, everything would point to droplet infection as being of paramount importance. Numbers of mild carrier cases, a population of susceptible people, and a disease infecting the upper respiratory passages, causing a prolific secretion of infectious material, produce a combination which must result in a pandemic or widely spread epidemic.

While the number of cases reported are few, the bacteriologic findings are of considerable interest. All were typical cases.

Blood cultures were made from seven patients, and all proved negative.

The sputum was examined in fourteen cases, in three of which the acute symptoms had subsided before this was done. Direct smears were made to bring out the small and lightly staining influenza bacillus. After microscopic examination, a small specimen of the sputum was washed and plated out on blood agar.

Of the fourteen specimens examined, only three showed the presence of Pfeiffer's bacillus. Two of these three cases were complicated with pneumonia. The other eleven cases showed a variety of organisms. Pneumococci prevailed in three, almost pure *Micrococcus catarrhalis* in one, and the others gave a variety of streptococci, gram-negative and gram-positive, diplococci, etc. In two cases a diphtheroid bacillus greatly predominated.

We wish to draw special attention to three particularly interesting cases:

REPORT OF CASES

Case 1.—A man had a typical attack of influenza with no complications. About one month previous to the attack the sputum showed a pure culture of influenza bacilli. The patient had been suffering months from chronic bronchitis. A vaccine was prepared and the patient had received two or three injections of it. Two or three days prior to the attack, the patient, being at that time quite free from influenza, brought a sample of his sputum to the laboratory for further examination. This showed an almost pure culture of the *influenza bacillus*. Sixty hours later the patient was down with typical influenza. The same patient, about two weeks previously, when receiving an injection of influenza bacillus vaccine, stated that his wife and one child were very sick with epidemic influenza, and asked whether it would be possible for him to become infected. I replied that it was more than likely that the present infection and the vaccine would protect him. This patient, whose sputum at times was teeming with the influenza bacillus, had been living with his family for weeks without introducing infection, but to epidemic influenza all succumbed.

Here is a clear-cut case of a person who had carried, and was still carrying, an influenza bacillus infection, and furthermore had received three injections of vaccine (Pfeiffer's bacillus), becoming infected and suffering from an acute attack of epidemic influenza. Had the sputum in this case been examined at the time of attack, only, the case would have been reported as "influenza due to Pfeiffer's bacillus." Some may question whether the organism isolated was the true Pfeiffer bacillus. All we can say is that it possessed all the characteristics of this organism, and was identical with those isolated from other cases.

Case 2.—S., about six weeks before the attack of epidemic influenza, had suffered from acute coryza. Bacteriologic examination of the discharge showed pure growth of a small, irregular, gram-positive bacillus, a sort of diphtheroid. At this time there were no symptoms of influenza. The case was one of simple coryza. Later when the patient suffered from influenza, pronounced coryza developed. This again showed the same small diphtheroid bacillus. The mild laryngitis which developed simultaneously gave a growth of pneumococci.

Case 3.—C. had suffered nine months previously from bronchitis due to the pneumococcus (type not determined). Vaccine treatment had greatly helped the patient, and for six months there had been practically no sputum. After recovery from the acute symptoms of epidemic influenza, a pneumococcal bronchitis remained. It is, of course, impossible to know whether the organism from the first infection had been carried over or not. Vaccine treatment again helped much in clearing up the bronchitis.

EVIDENCE FOR AND AGAINST THE PFEIFFER BACILLUS

It is still questionable whether Pfeiffer's bacillus can be considered as the specific cause of the present pandemic. An endeavor will be made to present evidence both for and against the Pfeiffer bacillus.

Evidence Against the Pfeiffer Bacillus.—1. The highly contagious nature of this disease, frequently spreading, as it does, with lightning-like rapidity, presupposes a virus present in large quantities even in very small specimens of the infected sputum. This we do not find to be the case, assuming Pfeiffer's bacillus to be the cause of the disease.

2. The bacillus is isolated in a comparatively small percentage of cases.

3. The disease attacked one who was at the time infected with Pfeiffer's bacillus.

4. There is an absence of marked antibodies to this bacillus except in cases in which the bacillus has been isolated.

Evidence for the Pfeiffer Bacillus.—1. Pfeiffer's bacillus is found more frequently than any other organism.

2. There is no evidence supporting the theory of an ultramicroscopic cause.

In connection with the question of etiology it seems to us that two mistakes have been made: first, in considering Pfeiffer's bacillus as the specific cause for the disease known to the clinician as influenza, when there is evidence to support the view that clinical influenza may be produced by the pneumococcus or certain strains of streptococci, that is, if we ignore the view of a filtrable virus and believe the disease due to visible organisms only, and second, by following the clinicians too readily in calling the disease "influenza," before the influenza bacillus had been found consistently enough to warrant such a pronouncement.

The clinician has a right to apply the name influenza to the disease, because he has arbitrarily decided on such nomenclature for such symptoms; but the bacteriologist must follow slowly. *Influenza to him* is a specific infection due to the Pfeiffer bacillus. We think the advance in this case has been unjustifiably rapid.

Looking over a group of twenty sputum specimens which were cultivated on blood agar for the purpose of making vaccines, we find that eight showed the presence of Pfeiffer's bacillus, five in almost pure culture and three mixed. These cases were clinically influenza, coryza, bronchitis and asthma. The cultures were made during the winter of 1917-1918. We mention the fact first to show that out here among the natives and the foreigners, infection with the Pfeiffer bacillus is common. However, the point we really want to make is this, that since before the epidemic came the influenza bacillus was a common parasite in respiratory infections, may it not be true that some other organism plays now the rôle of primary infection, while the presence of the influenza bacillus and of the pneumococcus so frequently found is due to the frequency with which these organisms are carried?

The so-called hog cholera bacillus, while found in almost all cases of hog cholera, has no etiologic relationship to the disease, the cause being a filtrable virus.

TRANSMISSION EXPERIMENTS WITH FILTRATES

The experiments here recorded do not lend support to the idea of a filtrable virus. The experiments, although few in number, were carried out on human beings and are therefore of some significance:

Experiment 1.—Blood from two typical cases of influenza was collected in citrate, immediately centrifuged, and the supernatant fluid filtered through a Berkefeld "N" filter. Owing to a lack of enthusiasm among the experimentists the filtrates had to be mixed, and 1 c.c. of each was given to a Korean physician intravenously. The unfiltered bloods were also mixed and a Korean and one of us (F. W. S.) each received 1 c.c. of the pooled blood. The two patients from whom the blood was taken had been sick about twenty-four hours. They were quite prostrated and showed typical symptoms. The temperature of one was 104 and of the other 101. The temperature did not rise higher in either case.

Results.—The experiment, we fear, means little. We were of course all exposed to the infection. The Korean physician who received the filtrate came down with influenza on the third day. He was very sick for almost a week. The senior author, who had taken the unfiltered blood, came down with influenza in forty-eight hours. The attack was slight, although typical. The nasal secretions, which were profuse, gave a pure culture of a diphtheroid bacillus. From the laryngeal secretion an almost pure pneumococcus culture was obtained. The Korean physician suffered from an acute bronchitis for about two weeks, but the influenza bacillus was not isolated. The Korean man who also received the unfiltered blood admitted afterward that he had just recovered from an attack of influenza. Nothing developed in him.

EXPERIMENT 2.—Two students who had not had the disease were each given 2 c.c. of filtered blood from a typical case. The results were negative.

EXPERIMENT 3.—The sputum from another case was taken and thoroughly shaken with saline until a uniform suspension was made. This was not now centrifuged to remove the coarser material, and the supernatant fluid was filtered. Cultures of the filtrate were sterile. Two more healthy students were each given 2 c.c. intravenously.

Results.—Both of the students were made definitely ill within three quarters of an hour after the injection. They reported chills, vomiting, rapid pulse, headache and pains. All symptoms gradually subsided, and within six hours the students had practically recovered. Apparently they suffered from an acute toxemia.

The sputum used in this experiment did not show any influenza bacilli, but gave a mixed growth, the most prevalent colony being a rather large, moist, grayish white, opaque colony. This organism was seen on other plates. It is not *Micrococcus catarrhalis,* although somewhat similar in morphology.

EXPERIMENT 4.—This was similar to the preceding experiment except that the sputum came from a different case. One man only was given 2 c.c. of the sputum filtrate: no results followed.

In all cases the filter used was a Berkefeld "N."

While these experiments are very limited, they would seem to show that the virus, if present in the sputum, is not capable of passing through a Berkefeld "N" filter candle. Also, if present in the blood, the evidence is against its passage through the filter, as only one out of four who received the filtrate developed the disease. With the epidemic raging, and the possibilities of natural infection so numerous, that one among the four men used should succumb to natural infection was most probable cannot be denied. Having passed through the dangers of the epidemic, as well as the fiery trials of the experiments, the subjects considered themselves as very refractory.

SERUM REACTIONS

Complement Fixation Test.—Samples of blood were taken from four patients who had recently recovered (within one week) from acute influenza, and four samples from normal persons. The antigen consisted of a saline suspension of influenza bacilli. After many tests with these bloods it was decided that the antigen was unsatisfactory. A slight increase of antigen caused the negatives to become positive, while in a working strength good positive results could not be obtained with the supposedly positive serums. There did appear to be a slightly greater tendency to fixation of complement on the part of those who had been infected. However, in one instance the blood of a negative patient, that is, of a person who had not had influenza, gave as good fixation of complement as the best positive among the patients' serums.

Agglutination Tests.—Microscopic tests were made on the bloods used in complement fixation. The results were of the same nature; while the patients' serums seemed to agglutinate slightly more than the normal serums, the result was not definite enough to be significant.

Skin Test.—A heavy suspension of influenza bacilli was shaken and extracted in distilled water for two days. The bacteria were then removed by filtration, and the filtrate was used. A class of fifteen students was injected, 0.05 c.c. being given intracutaneously. Within twenty-four hours a definite reaction occurred in all students. There seemed to be no difference between those who had been infected and had recovered and the immunes, or those who were at the time convalescing.

Animal Inoculation.—Four guinea-pigs were inoculated intraperitoneally with the pooled blood and pooled filtrate from two acute cases of influenza, two pigs each receiving 2 c.c. of the pooled Berkefeld filtrate, the remaining two each receiving 2 c.c. of the pooled blood. Night and morning temperatures were taken daily for two weeks; nothing abnormal was recorded.

CONCLUSIONS

Definite conclusions cannot be drawn from such limited work, but the results of our work and those of many others seem to indicate that:

1. The etiology of pandemic influenza remains unknown.
2. Much more evidence is needed to establish the relationship of Pfeiffer's bacillus to the infection.
3. Further experiments with both filtered blood and secretions are necessary in order to determine the possibility for filtrable virus.

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PULMONARY TUBERCULOSIS AT CAMP CODY, NEW MEXICO

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The first patient with tuberculosis entered the base hospital, Sept. 14, 1917. Of the cases observed up to Jan. 14, 1919, 114 have been diagnosed tuberculosis, all pulmonary, except one carpal bone, two glandular, two hip and two vertebral. One of the hip patients had active lung findings. No tuberculous respiratory lesion is reported by the examiners in the others of the latter group.

With the exception of four recruits and five civilians, all have had service varying from two days to five years. Seventy-one men served six months or less, and 108 less than one year. The youngest was 18 years of age and the oldest 45; twenty-one were from 18 to 20; eighty-three were in the third decade of life, eight in the fourth and two in the fifth.

These patients belong to the white race except one Filipino and one Indian. Most of them came from Iowa (twenty-three), Nebraska (seventeen), Minnesota (ten), Illinois (seven), Texas (seven), Missouri (six) and Oklahoma (six).

OCCUPATION

In these states, the most actively agricultural of all in America, the highest number came from the rural districts, as the occupation of farming led with thirty-nine. Mechanics numbered eighteen, clerks fourteen, cooks seven, students six, carpenters six, common laborers five, other outdoor vocations ten, and other indoor vocations nine. These figures seem to contradict the belief that sedentary life is more predisposing to the development of tuberculosis than open air pursuits. The reason for this apparent discrepancy is that more men in this camp arrived from the country than from the towns and cities. On the other hand, the figures convince us that tuberculosis is more or less common in those subject to the physical strain, though engaged in the open. Moreover, some indoor occupations prove to be a rest cure for lesions of a few patients, so limited as to produce no untoward symptoms. Similar lesions in those enduring severe labor might be disastrous before a physician is consulted.

FAMILY HISTORY

According to information available, the family history was not really valuable in the study of the cases, for it was negative in eighty-one. In the family history of the other cases, the disease had this incidence: The fathers of eight patients had pulmonary tuberculosis; the mothers of six; the brothers (one each) of three; the sisters (one each) of three; the fathers and mothers of two; the two sisters of one; the father and brother of two; the father, sister and two brothers of one, and the paternal grandparents and father of one.

PREVIOUS PERSONAL HISTORY

The previous personal history, when intelligently given, often reveals the beginning of the tuberculosis, even months or years before the patient suspected anything wrong. The onset in quite a high percentage of cases occurs in some nontuberculous pathologic condition of the respiratory tract which reduces what immunity the patient may have against tuberculosis. Of the series written up in this report, 48 per cent. gave such a previous history. Eighteen per cent. of them had pneumonia; 5 per cent., bronchopneumonia; 10 per cent., measles; 8 per cent., influenza, or so-called la grippe; 2 per cent., bronchitis; 5 per cent., tonsillitis; 6 per cent., pleurisy, and 9 per cent., frequent and protracted colds. Pleurisy and colds lasting six weeks or more were found to be greatly significant.

Of the 114 patients, nineteen had spitting of bloody sputum; two, hemoptysis; thirty-six, chronic cough; eight, blood-free expectoration; forty-four, afternoon rise of temperature; twenty-eight, loss of weight, and twenty-two, night sweats. Four stated that the appetite was extraordinary. Not infrequently toxemia was not apparent, since fever was found absent and digestion undisturbed by a full diet. In two cases of activity, the patients declared that health was always perfect. Thirty-eight gave a negative personal history. One ascribed the cause of tuberculosis to aspiration of a pen point which later was coughed up.

HISTORY OF PRESENT ILLNESS

It is interesting to note the duration of illness as given by tuberculous patients. On inquiry it was found to be from one day to fifteen years. The symptoms of coughing, expectoration, hemoptysis, loss of weight and strength, night sweats, dyspnea, hoarseness, and pain in the chest were relied on in the history of the present illness. Some of the symptoms were more common than others and were usually considered by the patient only slightly if at all deserving attention, namely, chronic cough, tiring easily, afternoon fever (only sixteen reported any fever), and pains in chest.

DIAGNOSIS AND GROSS PATHOLOGY

Pleuritic pains, blood spitting, and sputum associated with frequent persistent colds were valued by the examiner as highly important in the diagnosis. A history of this character, with definite physical findings, made the diagnosis reasonably certain. If, in addition, tubercle bacilli were found in the sputum, the case was considered typical. The findings in about 50 per cent. of the cases in this hospital pointed to a condition of fibrosis, there being present such signs as impaired resonance, increased voice transmission, and abnormal breathing, as bronchial, bronchovesicular, harsh breathing or prolonged expiration. In a few subjects the fibrosis was so extensive that retraction was quite noticeable. In these the breath sounds were more or less suppressed.

This pathologic condition seemed to have its origin most frequently in an upper lobe. If it extended to a lower lobe, the evidence showed great damage done above, with extensive infiltration. The right upper lobe was involved alone in fourteen cases, the left upper lobe in six, both upper lobes in seven, the right upper and lower lobes in four, other right upper groupings in five, other left upper groupings in three, upper bilateral and a lower in three, right lower alone in nineteen, left lower in fifteen, right middle in six, lower bilateral in four, entire right lung in eight, entire left in five, both lungs in four, miliary tuberculosis in four, and no demonstrable focus in two. Because of the tendency of the disease to advance from above downward, this fact was particularly recognized when confusion in the diagnosis arose in the postinfluenzal chest. The showers of constant moist râles in the basal lobe of the lung were not considered significant unless associated with findings of tuberculosis in an upper lobe.

GENERAL OBSERVATIONS

Nearly 50 per cent. of the entire number of patients had an active lesion, for most of them had persistent subcrepitant râles after expiratory cough, some had constant crepitant râles, and a few had both. In two cases, d'Espine's sign was present, three had no physical signs except showers of localized, persistent, moist râles, and two had no evidence whatever except the positive sputum.

In our series here only 5 per cent. had morning rise of temperature, and less than 50 per cent. afternoon fever. The morning pulse was commonly slow, even down to 50. In the afternoon it varied from 64, the lowest, to 130, the highest. It was our observation that, contrary to the teachings of many, the pulse is usually slow in tuberculosis. This was probably due to the almost complete rest cure treatment of those having fever or an acute lesion, exercise being confined to getting about in the ward and on the porches.

DISPOSITION

It was found that seventy-eight had tuberculosis prior to entering federal service. The remaining thirty-six were in the line of duty at the onset of the disease. Forty-four were discharged on a certificate of disability (fifteen one sixth and one one eighth); forty-nine were sent to the Army General Hospital, Fort Bayard, N. M., and three to Army General Hospital Number 21, Denver, for observation and treatment. Nine men were returned to duty. Three soldiers and three civilians died in this hospital within a short time after admission. The other two civilians left the hospital.

LABORATORY WORK

The laboratory work consisted of sputum examinations, blood counts, and the making of roentgenograms (in obscure cases of hilum tuberculosis and extensive fibrosis without definite physical findings). The sputum in twenty-one cases was positive for tubercle bacilli. The method used was repeated daily examinations of morning specimens. The white blood count had a variation of from 3,800 to 19,000. Of striking interest is the fact that not in a single instance were bacilli found in disease of the lower lobes unless associated with pathologic change in an upper lobe, as shown in the accompanying table. Two of the patients had subcrepitant râles only in the right apex, unaccompanied by fever. Four others had absence of afternoon rise of temperature.

SUMMARY

1. In the cases studied, 114 patients had tuberculosis. Seventy-one had served less than six months when first considered unfit for active service.

2. Physical strain may either make an acute process more active or reactivate a healed lesion.

LOBES INVOLVED IN TWENTY-ONE CASES SHOWING POSITIVE SPUTUM

	Number	Temperature	Pulse
Right upper	9	99 to 103.8	70 to 130
Left upper	1	98.2 to 99.2	60 to 80
Both upper	1	98.6	72 to 88
Both upper and right base	1	99.2 to 102.4	84 to 112
Both upper and left lower	3	98.4 to 100.6	72 to 96
Left upper and both lower	1	99 to 102.6	76 to 116
Left upper and hilum	1	98.6	68 to 72
All lobes	2	97 to 98.6	60 to 97
No localization	2	97.4 to 100	72 to 104

3. Family history is of slight value as compared with the previous personal records. Some nontuberculous respiratory disease most commonly appears in the latter.

4. Some patients with active tuberculosis may feel perfectly well, not having any symptoms whatever, no cough, no fever, etc. A severe symptom, as hemoptysis, may be the first warning. A widespread involvement of the lung up to this time may exist without the patient's knowledge.

5. The history of cough, loss of strength and weight, afternoon fever, increased pulse rate and night sweats is of less importance, in the early diagnosis, than that of pleurisy, blood spitting, excessive expectoration, and frequent colds lasting six weeks or longer. Associated with this, the most significant physical finding is that of localized showers of persistent, moist râles after expiratory cough.

6. Pulmonary tuberculosis usually takes a general route from apex or upper lobe downward, and in advanced cases to the opposite side. This should be kept in mind in the differential diagnosis of pulmonary tuberculosis from the influenzal sequelae.

Diet of the Nations at War.—In the diet of nations at war there is a profusion of vegetables, more than in peace time, that contain minerals, roughage and vitamins freely. Go where you will, in the United Kingdom, France, Germany, Switzerland or Holland, one finds the diet of the people today rougher, coarser and containing more vegetables and less concentrated foodstuffs than in peace time.—A. E. Taylor, "War Bread."

LETHARGIC ENCEPHALITIS

PRELIMINARY REPORT

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The special article and editorial on "Epidemic or Lethargic Encephalitis,"[1] which recently appeared in The Journal, prompt me to report the following cases:

Case 1.—*History.*—In October, 1918, I was asked to examine a little girl, aged 6 years, suffering from a rather unusual group of symptoms. It seemed that the illness had begun as a mild, febrile disturbance, accompanied by flitting neuralgic pains about the face and other portions of the body. Within forty-eight hours the unusual symptoms developed, which prompted the attending physician to seek counsel. According to his account, the little one had lapsed into a strange state of mental apathy, from which she could hardly be roused; she would not take food, and would not talk voluntarily or answer questions. The bladder and bowels moved involuntarily, and the whole mental picture was one of sluggishness and lethargy. Another unusual feature of the case which attracted his attention was a tendency on the part of the child to maintain almost indefinitely a fixed position when placed in a definite attitude by the examiner, thus resembling very much the catatonic postures of dementia praecox.

Examination.—I found the general demeanor of the patient exactly as related by the physician. There were no neurologic symptoms worthy of mention, with the exception of a possible slight increase in the tendon reflexes of the left upper and lower extremities. The lethargy was very marked. The pupils were equal, regular, and responded promptly to light and distance. There was no apparent involvement of the ocular muscles. The temperature registered 99.4; the pulse, 100. The patient lay in an inert manner with the eyes open, and without moving a muscle. When some playful remark was addressed to her, a very faint suggestion of comprehension was displayed by the muscles of expression. She would not, however, answer questions. I placed her in odd and uncomfortable positions, and she would make no attempt to change to a natural or more comfortable one. This lethargic condition continued for about a week and then gradually cleared up. Within a period of three weeks a complete recovery was made, with the exception of a residuum of slight nervous irritability.

My opportunities for laboratory examinations in this case were almost nil; therefore I am unable to rule out definitely many conditions which must be considered in a case of this kind; but the complete recovery would tend to exclude tuberculous meningitis. The absence of rigidities and all classical evidences of meningitis would serve to disprove its presence, and negative Wassermann tests, obtained since recovery, help to exclude syphilis. On the other hand, the typical lethargic state unaccompanied by any great rise of temperature, together with the fixed postures, corresponds closely to the descriptions given us of lethargic encephalitis.

After examining, in a limited manner, this case, I felt justified in making a diagnosis of encephalitis; but at that time I was unaware of a disease entity of the encephalitic type which features lethargy as being the star symptom in a new syndrome.

Were it not for the fact that I am able to report a thoroughly investigated case which conforms more closely to the symptoms of the disease under consideration, I should have hesitated to make the fragmentary report just given; and my sole object in so doing is to substantiate if possible my belief that this type of illness has been present among us for some time and is not simply a recent development.

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[1] Epidemic or Lethargic Encephalitis (Nona), special article, J. A. M. A. 72: 794 (March 15) 1919; Epidemic or Lethargic Encephalitis, editorial, p. 796.

Case 2.—*History.*—Miss M. H. of Radcliffe, Iowa, an unmarried Norwegian woman, aged 18, whose family, previous and menstrual histories were negative, developed a headache and fugacious pains about the face and body, Feb. 10, 1919, which persisted and annoyed her greatly for several days. If there was fever at all, during this time, it was not a prominent symptom. February 19, she consulted her family physician more especially because she could not fully open her eyes, as the result of a double ptosis which was sufficiently marked to prevent the physician from getting a good view of the pupils without holding up the eyelids. A record made at this time indicates that the pupils were equal but narrowly contracted, so much so that it was difficult to determine the reactions to light and distance. The temperature was 99.6, the pulse, 80. A vacant, immobile, expressionless cast of countenance was observed, and a blood count demonstrated only 8,000 leukocytes per cubic millimeter. February 22, it was observed that marked slowing or retardation of all bodily movements had developed. February 24, she became very lethargic, or apathetic, and would take nourishment only when repeatedly and strongly urged. On this date, also, catheterization had to be resorted to, and nystagmoid movements of the eyeballs were noted. February 25, these nystagmoid movements became more marked, being observed when the eyes were directed to either the extreme right or left. During all the time after she came under the observation of her physician, she could walk about, but walked in a very slow, rigid manner. In looking about the act was accomplished by turning the whole body rather than by rotation of the head on the shoulders. As this rigid, lethargic mental and physical attitude increased, it was noticed that she would assume and maintain awkward and unnatural postures, and if her extremities were placed in some strange attitude the posture would be maintained for long periods of time, as in catatonia. Two or more urinalyses, made by her physician before my examination, were entirely negative, and the temperature never exceeded 99.6.

Examination.—February 25, I found the patient to be a robust girl whose facial expression at first disappointed me because I had been led to believe that she was afflicted with a new disease, and I thought I would find, on examination, an ordinary case of dementia praecox. A few moments and some questioning, however, enabled me to determine that the mind, though lethargic, was not that of an insane or demented person. The temperature was 99.4, pulse 80, and respirations 22. The face was expressionless, masked and stolid; the eyes were unwinking; there were occasional nystagmoid jerks to the right or the left, even without being especially elicited. The patient responded to questions with perfect intelligence, after being spoken to repeatedly in a commanding manner. The olfactory sense was normal; the ocular fundi, negative; there was a very slight tendency to bilateral ptosis; the left external rectus was weak; the pupils were oval or irregular, moderately dilated, and responsive to light, distance and consensuality; the conjunctival and palate reflexes were normal; the facial movements were bilaterally and equally restricted, more especially in the movements of expression; the tongue protruded straight; the palate retracted straight; the neck was rigid, but the head was not retracted; marked resistance was noted when the head was passively rotated on the shoulders. Right finger to nose was normal, but the movement was accomplished slowly. Left finger to nose was slow and incoordinate, and was accomplished with a suggestion of coarse tremor involving the whole extremity. The grip of the right hand was normal; of the left hand, diminished. The entire left upper extremity was somewhat paretic. The triceps and supinator jerks were equal and apparently normal, those on the left side being possibly a trifle more brisk. The patellar reflexes were equal but somewhat too brisk. The Achilles reflexes were present and equal, but diminished. The abdominal reflexes were normal. None of the pathologic reflexes, such as the Babinski and Oppenheim phenomena, could be obtained. All types of sensibility appeared to be intact, over all portions of the body. The suggested ataxia of the left upper extremity may possibly have been due to muscular weakness. The heart and lungs were entirely negative, and no abnormalities of the abdominal or pelvic viscera could be detected. Special attention to the liver was given, because of the possibility of the presence of Wilson's disease.

When the patient was placed on her feet and asked to walk across the room, her gait and postures slightly resembled those of Parkinson's disease, with the exception that there was a tendency to stagger, much as one does with cerebellar disease. The head was held with the chin slightly elevated and to the right, with the left ear inclined a little toward the left shoulder. The right upper extremity was slightly abducted from the chest and flexed at the elbow, and the hand carried a little below the level of the groin. When commanded to look around, the patient turned the whole body rather than rotating the head on the shoulders.

Laboratory Investigations.—Blood count revealed: reds, 4,400,000; leukocytes, 7,000; hemoglobin, 80 per cent.; polymorphonuclears, 69 per cent.; lymphocytes, 24 per cent.; large mononuclears, 4.5 per cent.; eosinophils, 1.5 per cent.; transitionals, 2 per cent. Blood cultures were negative. Examination of the spinal fluid gave negative Wassermann tests in all dilutions; the globulin was not increased; there were 12 cells per cubic millimeter; smears were negative; aerobic and anaerobic cultures on glucose serum agar and blood agar were negative.

COMMENT

As this case indicates profound disturbance of the brain and cord, characterized in the beginning by bilateral ptosis, mild febrile reaction, and a state of physical and mental lethargy; and since the laboratory evidence corresponds exactly with that found in epidemic lethargic encephalitis, I feel justified in reporting the case under this diagnostic classification.

There are two or three matters which may be worthy of comment in connection with these reports. In the first place, there was no history of influenza in either of these cases, unless the mild febrile disturbance which ushered in the illness might be so interpreted. Then again, it is of interest to note the similarity that exists between the bodily lethargy in these cases and in Parkinson's disease. When one considers the pathology in both, it is only fair to assume that minute hemorrhagic areas in the corpus striatum, as observed in lethargic encephalitis, may produce the same symptoms as the degenerated areas in the same structures in Parkinson's disease. Another point of interest in connection with Case 2 is the fact that when lumbar puncture was made, and 20 c.c. of spinal fluid were removed, there was a marked improvement in the mental state of the patient, in that she volunteered several statements and asked about some of her jewelry which she had placed in a certain receptacle for safety. This voluntary conversation was the first in which she had indulged for at least five days prior to my examination.

A report just received from the physician in Case 2 is gratifying. The patient is now up and about, and has lost all evidences of mental sluggishness, and the restriction in her movements is hardly noticeable. The most interesting factor in connection with the case is the fact that from the moment the spinal puncture was made she began to make rapid improvement.

Every Typhoid Convalescent a Possible Carrier.—Consider every case that recovers from typhoid as a possible carrier, either continuous or intermittent, temporary or permanent.—*Weekly Bulletin, A. E. F.*

PHYSICAL SIGNS AND THEIR MECHANISM IN ACUTE PULMONARY INFLAMMATION

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The recent epidemic of acute respiratory inflammation with frequent occurrence of complicating pneumonia has aroused new interest in physical signs associated with the latter condition. This is especially true because of the conspicuous absence of rapid respiration and pulse in the early and moderate degrees of pneumonic involvement and the consequent necessity for careful physical examination. Given the familiar picture of fever, cyanosis, rapid respiration and pulse following an acute bronchial infection, one is reasonably certain of his ground before proceeding farther. Confronted, on the other hand, by a subject who presents moderate fever, who has a respiration rate of 20 to 25, and whose pulse is but moderately accelerated, careful investigation becomes a necessity before one feels assured he is dealing with the usual case of so-called influenza and that a complicating lobular pneumonia has not developed.

No attempt is made in the present paper to encroach on the domain of pathology. Since, however, accuracy of observation has been dependent on postmortem confirmation, some reference to gross pathology and the organs in situ cannot well be omitted. The common picture is that of a lobular pneumonia with tendency toward confluence in the dependent positions. Even in the severer types, however, consolidated patches are usually interspersed with small air-bearing areas. The lobes so involved are in great part firm and their size is increased. An extensive unilateral involvement may displace the heart toward the less involved side, and sometimes pushes the liver downward. Actual bulging of intercostal spaces has been observed in some instances. Especial mention is made of this displacement of organs by the inflamed lung because of the natural tendency to associate such a phenomenon with pleural effusion.

Selecting, for the sake of simplicity, a case from our series that presented a patch roughly 8 cm. in diameter at the left scapular angle, the physical signs recorded are: diminished vocal fremitus; slight percussion dulness; diminished intensity of breath sounds with slightly prolonged expiration; clear, distinct, whispered pectoriloquy; the spoken voice diminished in intensity, the quality altered and pitch raised, as compared with the normal lung; and persistent, localized, fine-bubbling râles.

With confluence of lobular areas eventuating in practically a lobar involvement, vocal fremitus has been found to be frequently diminished; the percussion note impaired, often low-pitched tympany rather than dulness being elicited, breath sounds suppressed or of a weak, bronchovesicular or bronchial character; whispered pectoriloquy clear but not always loud; the spoken voice elevated in pitch, altered in quality, and the intensity exhibiting a wide variation, in some cases being distinctly diminished, in others intensified.

That diminished vocal fremitus and vocal resonance in the presence of dulness and whispered pectoriloquy have been a frequent observation in the absence of any pleural exudate has been confirmed by antemortem roentgenoscopy and roentgenography and by postmortem section. In necropsies early in the epidemic and later during its crest, pleural effusion was exceptional. With the ebbing tide, pleural complications with pus formation have been more frequent. Lack of anything approaching uniformity in physical signs in clear-cut uncomplicated pneumonias has led us to despair of determining the onset of pleural effusion except by the aid of exploratory puncture. In other words, the physical signs of many confluent areas are apt to approach those of ordinary lobar pneumonia, in which the vocal fremitus and resonance are sometimes increased, at others diminished. Variations from the typical picture seem to be accounted for by persisting areas of air-bearing lung and also by the presence of a considerable amount of frothy moisture.

The presence of vocal fremitus and vocal resonance of normal or diminished intensity, in association with bronchial breathing and whispered pectoriloquy such as has frequently occurred in this epidemic (and as is commonly found in other forms of pulmonary consolidation, especially of an acute inflammatory type), is not often referred to in the literature except as combined with fluid in the pleural cavity. Some of the confusion regarding the vocal resonance has resulted from a failure to recognize differences between intensity of sound, on the one hand, and variations in quality and pitch, on the other. When the spoken sounds become less muffled than in health, higher pitched, clearer and closer to the ear, the auscultator must take special care to keep these features entirely distinct from that of simple loudness or intensity, which we believe many fail to do. Austin Flint clearly expressed this distinction, stating that "a concentrated, high-pitched sound, however feeble, is not less a sign of complete or considerable solidification of lung. In other words, intensity is not essential." And again, "increased intensity may cease when bronchophony occurs."

The frequent occurrence of normal or decreased vocal fremitus and resonance plus bronchial breathing and whispered pectoriloquy in cases of consolidation presents a striking contrast to the findings over the normal lung, where the vocal fremitus and resonance are normal in intensity, and bronchial breathing and whispered pectoriloquy are absent. It is plain that sounds of different pitch are not affected similarly in solid and normal lungs, so that any explanation must include one or more factors apart from simple conduction. The factor that we wish here to emphasize as being of great importance in clarifying the subject —one that has been slighted in the literature—is that of the response of the membranous tissue of the normal lung to vibrations included within a certain range of pitch, the result being the production of secondary vibrations, these vibrations being different from those occurring when sounds are transmitted by ordinary conduction, which affects sounds of all pitch alike. This special factor is alluded to by Austin Flint in contrasting the clear-cut sounds heard over a consolidated area with the muffled, humming quality of normal voice sounds, the latter modification being attributed to "secondary vibrations set up in the taut-drawn elastic fibers of the alveolar walls, which blur the distinctness of the original sound waves."

In the comparatively simple case of the solid lung, sounds of varying pitch, after having once escaped from within the bronchial tubes, pass to the surface of the lung and chest wall, with no marked modification except that of diffusion, which acts alike on sounds of different pitch. While sounds of different pitch suffer diminution, they maintain to a great extent their relative degrees of intensity. With the normal lung, on the other hand, sounds of one pitch reach the chest surface well maintained, being even louder than in many cases in which the lung is solid; while sounds of another pitch, lost in the normal lung, become plainly audible in the solid lung.

In the normal lung tissue, then, in contrast to solid lung tissue, sounds of different pitch are affected differently. The lower pitched ones, such as those we can detect by palpation, arrive at the chest surface over a normal lung in a state of considerable intensity, being often more marked than vibrations over solid lung. The higher pitched vibrations, however, such as occur in bronchial breathing and whispered pectoriloquy, are lost under normal conditions. Those that are lost suffer from the natural obstructive features encountered in the normal lung as it exists in the body. These features are, first, the reflective action of the tense membranous tissues of the normal lung, and second, the reflective action of the chest wall as vibrations pass to it from the alveolar air immediately beneath, factors entirely additional to that of diffusion. The lower pitched vibrations, though they may be affected by the obstructive factors just mentioned, are influenced in addition by one or more other factors that are distinctly favorable to their transmission, tending to offset any deintensifying influences. These favorable factors do not modify the higher pitched vibrations of bronchial breathing and whispered pectoriloquy.

The point we wish to emphasize is that the lower pitched vibrations, but not the higher pitched ones, initiate, in our belief, secondary vibrations in the membranous tissues of the normal lung, much as one vibrating tuning fork may cause another tuning fork of proper pitch to vibrate, or as the voice of a patient may set the mattress into readily perceptible vibrations. The principle involved is different from that which is operative in simple conduction. These normal pulmonary membranes are of such tension and structure as to be set into secondary vibration chiefly by vibrations within a limited but rather wide range of pitch.

To repeat, then, these secondary vibrations, excited
by the original relatively low-pitched vibrations com-
ing from the upper respiratory tract, tend, in the nor-
mal lung, to neutralize the obstructive factors just
mentioned, thereby furnishing vibrations plainly per-
ceptible at the chest surface. The higher pitched
vibrations in the normal lung, however, being unas-
sisted by any such favorable factor as that present in
association with secondary vibrations, encounter the
whole force of the obstructive features of the normal
lung unaided, and are therefore lost. The solid lung,
on the other hand, lacks both the special intensifying
and deintensifying factors present in the normal lung.
The solid lung, therefore, having chiefly the factor
of diffusion, which is present also in the normal lung,
to affect the vibrations passing through it, allows the
vibrations to reach the chest wall well preserved, and at the same time exerts an equal effect on vibrations of different pitch. Consequently when a normal lung with its capacity for developing these secondary vibrations is replaced by a solid lung, or a solid lung associated with the fluid in the pleural cavity, the vibrations at the chest surface will show more equal changes than in the case of the normal lung, all the vibrations being relatively increased or decreased.

Regarding fremitus, the hand can feel only vibrations of a relatively low pitch, so that whatever interferes with the normal intensity of these vibrations without substituting some factor equally favorable to their transmission—such a favorable effect being sometimes present, in others absent in disease—will result in a diminution of vocal fremitus.

In explaining the comparative intensities of vibrations over normal and solid lung, we must bear in mind, then, that the normal lung relatively favors the transmission of rather low-pitched vibrations by setting up secondary vibrations, while the solid lung tends to favor the transmission of sounds of all degrees of pitch by offering conditions favorable to simple conduction. It is thus easy to see why a diminished vocal fremitus is sometimes associated with an increase in the vocal resonance, and why voices of equal intensity but different pitch may yield different vibration intensities at the chest surface.

The association of whispered pectoriloquy with normal vocal resonance, frequently encountered over small areas of consolidation, is directly due to the size and location of these areas. Thus any modification of the spoken voice vibrations in these areas is lost to the ear because it is obscured by the vibrations coming from the surrounding normal lung, while the whispered vibrations encounter no such external interference.

EPIDEMICS AFTER WARS *

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The return of two million men from Europe after residing there for several months, to scatter throughout the United States, raises some public health questions of profound interest. Do these men represent any new element of danger to their country in respect to epidemic disease? The final answer to this question must be left to the settlement of time; but the importance of the subject demands that some attention be given it now.

The possibility that the returning troops will bring and spread infection lies largely in the fact that the soldiers have been living abroad in a foreign environment, mixing intimately with associates from various countries and places and in many ways not improbably exposed to infectious diseases.

Against some of the most common of these diseases they have been protected by vaccination, and against others by sanitary safeguards equally appropriate. But experience shows that the barriers raised against disease are not always efficacious. And the belief that pestilential diseases of various sorts have existed in Europe, sometimes very near the fighting lines, that the carrier state is often responsible for epidemics of

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* From the Division of Infectious Diseases and Laboratories, Office of the Surgeon-General of the Army.

these diseases, and that public sentiment is exerting great pressure in order to have the men demobilized with the greatest practicable haste, adds to the interest with which this subject may be regarded.

There is nothing new in the idea that returning soldiers may bring disease with them. Epidemic diseases have repeatedly been spread by soldiers returning after wars. Smallpox, cholera, typhoid and dysentery are included in the list of diseases for which definite statistics are available. In fact, the instances of troops infecting civil populations are so numerous that it may be said that no modern war has been entirely free from consequences of this kind. A careful statistical study of wars in their relation to epidemics, by Prinzing, was brought out in 1918 by the Carnegie Endowment for International Peace, and it is partly from this valuable source of information that some of the data here given have been taken.

SMALLPOX RESULTING FROM THE FRANCO-PRUSSIAN WAR

The way in which epidemic disease may be spread by soldiers finds illustration in the remarkable pandemic of smallpox which spread through Europe as a result of the Franco-Prussian War. In Germany alone, the disease is estimated to have caused the death of 170,000 persons. It was this outbreak that led to the passage of the law in 1874, making vaccination compulsory in Germany.

Smallpox was conveyed to England probably by French refugees in 1870. The death rate there increased from 0.7 per 10,000 inhabitants in 1869 to 1.2 in 1870, and 10.1 in 1871. It then declined to 8.3 in 1872 and 10 in 1873.

From Germany, smallpox spread into Austria and Bohemia. In Vienna the incidence rose per 10,000 inhabitants from 7.6 in 1871 to 52.7 in 1872; in Prague, from 1.5 in 1870 to 39.7 in 1872.

The smallpox was distributed through Germany and, in fact, brought into that country by French prisoners who came from infected districts. Up to the summer of 1870 there had been practically no smallpox in Germany; but at this time, thousands of French prisoners were, within a short time, brought into the country, and scattered in many directions.

The disease is believed to have been disseminated in various ways, including the following:

1. By prisoners who contracted the disease on their way to Germany.
2. By prisoners from infected localities.
3. By persons in the incubation period of the disease.
4. By carriers.
5. By fomites, that is, by infected clothing, blankets and other effects.

It was believed that nurses, guards and workmen who came into contact with the sick and the well spread the disease. There were thus created many small epidemics which spread until they became great ones. There was eventually formed a pandemic which raged more furiously and extensively than any other fatal epidemic in the course of the nineteenth century.

CHOLERA FOLLOWING THE CRIMEAN WAR

The experiences gained in and after the Crimean War illustrate the danger of cholera which infected troops may exhibit to civilian populations. In the Crimean War the French army carried cholera from Toulon and Marseilles to Gallipoli. At first, only sporadic cases appeared. These occurred wherever the French soldiers went in that vicinity, as Nagra, Varna and Adrianople. During the expedition to Dobrudja, cholera broke out in explosive form, compelling the army to return.

The English soldiers during the seige of Varna were also attacked by cholera. In September, when the scene of war was transferred to the Crimea, cholera broke out violently. The total number of deaths in the French army in the campaign was 12,457, in the English army 4,531, and in the Piedmontese army 1,230. The total combined strength of the troops is believed to have been about 262,000.

Cholera spread far and wide from the scene of the Crimean War, extending through Turkey, around the Black Sea, Greece, Smyrna, the Dardanelles, Constantinople and the Danube principalities. Typhus was also prevalent in the French army in 1855-1856. It was epidemic in the Russian army and in southern Russia. According to Murchison, it was carried by English troops to England, where it was epidemic in various parts of the country in 1856-1857.

TYPHOID, DYSENTERY AND SMALLPOX DUE TO THE AMERICAN CIVIL WAR

In the American Civil War, there was a great deal of typhoid, dysentery and smallpox, and there were serious extensions of these infections among the civil population. Owing to the absence of reliable statistics, it is impossible to state to exactly what extent disease was transmitted to the civil population. The vital statistics of some states, however, afford evidence of an unusual prevalence of disease at this time. For example, in Connecticut, the death rate rose from 1.0 in 1863 to 19.0 in 1864, after which it declined to 16.0 in 1865. In Massachusetts it was 18.5 in 1862, 22.1 in 1863, 22.8 in 1864 and 20.6 in 1865. The Massachusetts statistics show marked increases in typhoid, dysentery and smallpox. It is estimated that over 10,000 people contracted one or more of these diseases during the years of 1863-1865.

TYPHOID AND SMALLPOX AFTER THE SPANISH-AMERICAN WAR

An unmistakable wave of typhoid fever spread over the United States soon after the Spanish-American War. It manifested itself especially in small and in large epidemics. It is believed that the American troops returning from the typhoid-ridden camps carried the infection to their homes. There, sooner or later, in ways characteristic of this disease, the scattered foci gave rise to local outbreaks.

Some of the epidemics were of an explosive and highly sensational character. Included among them was the epidemic at Ithaca in 1903. In this instance there were some 1,300 cases; one in ten of the population was attacked, and about one in a hundred died. In the following year, there was an epidemic of 600 cases at Watertown, N. Y. The epidemic at Butler, Pa., at about the same time, had approximately 2,000 cases. Other epidemics at about this time were Augusta, Me., 1903; Cleveland, 1903-1904; Columbus, Ohio, 1904; Lowell, Mass., 1903; New Haven, Conn., 1901.

The deaths from typhoid fever increased in the cities even when no epidemics occurred. The prevalence so established remained high. Among all the cities of the United States having populations of 100,000, or more, the increase in the number of typhoid cases was as given in the left hand columns of the accompanying table. Still more marked was the increase in cities between 50,000 and 100,000 (right hand columns).

Turning now to the statistics of the commonwealth of Massachusetts, we find that although the death rate from all cases fell from 18.1 in 1897 to 17.5 in 1898, the typhoid rate rose from 2.3 to 2.4, falling decidedly after 1900.

In New York State the typhoid death rate rose from 1.9 in 1897 to 2.6 in 1898. It remained high for several years.

In Michigan the typhoid death rate rose from 1.9 in 1897 to 2.7 in 1898. It remained between 2.4 and 3.8 until after 1909.

PRECAUTIONS AGAINST INFECTION OF CIVIL POPULATIONS

Precautions have been taken on at least two occasions to protect civil populations from infection by troops returning home by water after distant campaigns.

When the French troops were brought back to France, after the Crimean War, only those were allowed to land from the transports who had for some weeks been entirely free from typhus. Several stations for the detention and examination of men were located along the Mediterranean Sea. Here, patients were left behind, while the well, under suitable precautions, were allowed to proceed. Suspected divisions of troops, before disembarking at Marseilles, were quartered at various islands fitted up as detention stations. Here the men were inspected, bathed and reclothed. The disease was not communicated to the civil populations.

INCREASE IN TYPHOID IN CITIES OF THE UNITED STATES

Cities of 100,000 or More		Cities Between 50,000 and 100,000	
Year	Cases	Year	Cases
1897	3,571	1897	747
1898	5,228	1898	923
1899	5,146	1899	1,025
1901	5,168	1900	1,002
1902	5,401	1901	867
1903	6,026	1902	968
1904	5,969	1903	940

After the Russo-Japanese War of 1894-1895, the Japanese employed a twofold system for the elimination of infectious disease among the returning troops. First, infected soldiers and soldiers suspected of being infected were not allowed to join the transports bound for home. Second, quarantine stations were established at Dairei (near Moyi), in Ninoshoma (near Njina) and at Wadano, Misiki (near Kobe).

When the transports reached their destinations, the men were divided into groups of sixty and sent to disinfection establishments, where they were bathed and their effects disinfected. The sick were sent to the hospital, and suspicious cases were quartered in barracks under observation. If infected men had been found on the ship, the ship's crew and officers were treated as suspects. The disinfection stations received 828,376 men for examination. Of this number, 429,762 were disinfected.

These historical and statistical notes show the great danger that returning troops are to civil communities. Sometimes great epidemics have been produced. What is of even more importance, a continuing prevalence of disease over large areas of country for many years has resulted.

Typhoid fever had reached a low point just before our troops returned from the Spanish-American War. The effect of this return was to produce an increase that has continued in many quarters for twenty years. If statistics were available to show the facts, it would be found that a great deal of the smallpox was scattered through the United States as a result of the Spanish-American War. Statistics from the states where most of the smallpox is believed to have occurred are not available.

PRESENT DANGERS AND PRECAUTIONS

Some of the epidemic diseases now to be apprehended from our European troops are of types which, if once well started, might produce great havoc. They include trench fever, typhus, relapsing fever, cholera and plague. Most of these are transmitted by vermin, most commonly, the louse. It is known that conditions do not generally exist in the United States favorable to the transmission of disease by lice, but in certain congested localities and among foreigners this is not the case. Louse infestation is not an unheard of condition in America in peace times. Methods of dealing with the louse problem so as to prevent their extension among troops are practicable, but the extermination of vermin among great civil populations is another matter.

A certain procedure is now being employed to prevent the introduction of louse-borne diseases by our returning troops. All troops are detained at foreign ports for a period of two weeks, during which time they are deloused. Vermin inspections are then made on transports, for occasionally, in spite of rigid instructions, vermin-infested troops slip through. On arriving in this country all troops are sent to debarkation camps, where universal delousing is practiced. Here good facilities are afforded for the detection of vermin and the delousing of the clothing and the bodies of the soldiers.

It is possible that cholera may be brought to the United States by our troops; but so long as political and social conditions remain as they are today, the disease should not gain a footing. Some regiments are probably exposed to it now. For some time cholera has been known to exist in western Russia, Sweden, Spain and Austria-Hungary, and it has recently been reported in Germany and France. It is also at Archangel, or near there.

Cholera has a special meaning for America, not alone because of its previous visitations and the exposure of our troops to it abroad, but also for the reason that conditions are known to exist in some parts of the country which would favor its spread. It will help to understand this matter to remember that the etiology of cholera and typhoid are practically identical. In some parts of the United States typhoid is a very common disease, and there are few places where it does not occur to some extent.

The meaning of this fact is plain and unpleasant to contemplate. The presence of typhoid proves that people are eating one another's excrement. The amount is infinitesimal, but the consequences are large. If cholera was introduced into this country, this fact, and the circumstance that practically nobody is immune to the disease, would favor its spread. It would not occur explosively, of course. Local and unrecognized epidemics would first occur until the disease obtained a footing. If it was not checked then it would do widespread damage.

By some it may be thought that the administrative control of health conditions is so thorough in America that no disease could spread so seriously as to threaten the whole country. This is probably true; but there is no absolute certainty about it. In recent years some infections have spread surprisingly. It is not to be forgotten that infantile paralysis has run a practically unrestricted course through some of our greatest cities; influenza has spread throughout the country; typhoid, like the poor, is always with us, and pneumonia, far from submitting to the efforts of health workers, has assumed great proportions and is on the increase.

Nobody would think it possible that epidemics could gain headway in a country so enlightened as America, where so much attention is paid to personal and domestic hygiene, and where the public welfare is so much the concern of municipal and state governments. The possibility of pestilence in our homes is incredible. And yet it is exactly this attitude of mind that has probably been held wherever epidemics have broken out since the early history of mankind.

The safe attitude of mind to hold in regard to this subject is one of caution. The proper action is preparation. Only persons well trained in public health work should be put in responsible positions where they are to administer and teach the principles of sanitation and of epidemiology. Boards of health should be soundly constituted as to personnel; they should be given sufficient funds to do their work; politics should be rigidly excluded from the administration of the public health. In no department of public affairs is it more important that ability should be the guiding principle in the selection of officers.

The young men returning from Europe have received a certain amount of instruction in personal hygiene and have had opportunities to observe how unremitting is the care that is necessary in order to preserve the health of troops. They have had many useful, and some painful, lessons in this matter. In some cases they will be able to spread the knowledge which they have received. They are capable of arousing considerable interest in public health work. The possibilities in this direction should be utilized. Efforts should be made looking to the prevention of unnecessary sickness and the promotion of health and efficiency on a higher plane than has ever been seen before.

Annual Report of Health Department.—The total estimated population of Hawaii, June 30, 1918, was 256,180. The total number of deaths was 4,010, an increase of 512 over the previous year. The annual rate per thousand of population was 15.65, and excluding the deaths from external causes, 315, the annual rate would be 14.42 from disease alone. In the city of Honolulu there were 1,395 deaths, an increase of 126 over 1916-1917. The total number of births during the year was 9,404, and according to the figures of the Japanese consulate, 5,086 of these were Japanese. The birth rate for the territory was 36.71, as compared with 34.75 for the previous year. There were 2,039 cases of contagious and infectious diseases reported, an increase of 178 over the previous year. The number of cases of typhoid fever reported by the islands was: Oahu, 1,287; Hawaii, 382; Maui, 152; Kauai, 207; Molokai, 11. All sanitary measures were vigorously carried out during the year, including the rat campaign. Tuberculosis reported numbered 937 cases as against 900 for the previous year. June 30, 1918, the number of lepers in the settlement was 608, an increase of twenty-one from the previous year. An advance in treatment was made, apparently, in the employment of four different fatty acid fractions isolated from chaulmoogra oil.

CARDIAC HYPERTROPHY IN PERNICIOUS ANEMIA

NOTE ON NINETEEN NECROPSIES

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AND
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A teamster, American, aged 32, entered the Massachusetts General Hospital, June 14, 1913, with a two years' history and blood typical of pernicious anemia.

In the five years between this date and his death, Sept. 11, 1918, he was seven times in the hospital. Splenectomy was performed in January, 1914; a remission occurred over a year afterward, and five transfusions were performed. He was able to work a considerable part of the time.

HEART HYPERTHOPHY IN PERNICIOUS ANEMIA

Case No.	Number of Necropsy	Diagnosis	Pathologist's Judgment as to the Heart	Heart Wt., Gm.	Remarks
1	2206	Pernicious anemia, puerperal type	Slightly hypertrophied	300	Aged 27; kidneys normal
2	2338	Pernicious anemia	Slightly hypertrophied	310	Slight arteriosclerosis in aortic arch and abdominal aorta; kidneys normal
3	2601	Pernicious anemia	Hypertrophied	436	Slight arteriosclerosis of aorta only; kidneys normal
4	2709	Pernicious anemia	Hypertrophied	358	Slight acute endocarditis of aortic valve; kidneys normal
5	2765	Pernicious anemia	Hypertrophied	450	Arteriosclerosis; kidneys normal; considerable valvular deformity
6	2815	Pernicious anemia	Hypertrophied	285	A very small woman; no other cause for cardiac hypertrophy
7	2925	Pernicious anemia	Hypertrophied	415	Arteries and kidneys nor-normal
8	3010	Pernicious anemia	Slight hypertrophy and dilatation	267	Small emaciated woman; arteries and kidneys normal
9	3060	Pernicious (or aplastic?) anemia	Slight hypertrophy and dilatation	360	Slight subacute glomerulonephritis
10	3084	Pernicious anemia	Hypertrophy and dilatation	363	Arteriosclerosis of abdominal aorta and its branches; slight subacute glomerulonephritis
11	3215	Pernicious anemia	Hypertrophy and dilatation	398	Slight acute glomerulonephritis
12	3374	Pernicious anemia	Hypertrophy and dilatation	472	Slight arteriosclerosis of aorta; arteriosclerosis of coronaries
13	3667	Pernicious anemia	Hypertrophy and dilatation	349	
14	3692	Pernicious anemia	Hypertrophy and dilatation	410	Small band of chronic pericardial adhesions; loose binding; slight acute glomerulonephritis
15	3706	Pernicious anemia	Hypertrophy and dilatation	360	Acute glomerulonephritis (streptococcus sepsis)
16	3806	Pernicious anemia (?)	Dilatation	300	
17	3854	Pernicious anemia	Hypertrophy and dilatation	391	Slight arteriosclerosis
18	3865	Pernicious anemia	Hypertrophy and dilatation	710	
19	3027	Pernicious anemia	No hypertrophy	262	

Scores of blood examinations were made, of which one made in June, 1916, is typical: red cells, 792,000; white cells, 4,000; hemoglobin 20 per cent.

At necropsy there were the usual lesions of pernicious anemia. The marrow showed megaloblastic hyperplasia. The myocardium was fatty, and there was slight edema of the lungs.

The heart weighed 710 gm. The arteries and kidneys were normal and there was nothing in the heart itself or elsewhere to account for hypertrophy.

The results of necropsies in nineteen cases of pernicious anemia at the Massachusetts General Hospital between 1908 and 1919 are given in the accompanying table.

Eighteen out of the nineteen cases that came to necropsy in this ten-year period showed, in the judgment of one of us (O. R.), a definite hypertrophy or dilatation of the heart.

In three of these (Cases 5, 10 and 12), possible causes for the hypertrophy were found in the arteries, the kidneys or valvular lesions of the heart itself. In the other fifteen cases (or 83 per cent.), none of the usual causes (or accompaniments) of cardiac hypertrophy were present.

CONCLUSION

Cardiac hypertrophy, sometimes very considerable, is often associated with pernicious anemia.

DICHLORAMIN-T AND PETROLATUM DRESSING FOR BURNS*

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Dichloramin-T as a wound antiseptic has the very real advantage of furnishing a continuous supply of the antiseptic agent, securing a continuous action over long periods of time, and this with the simplest forms of dressings. A continuous supply of antiseptic is very important in the treatment of infected tissues when it is out of the question to kill all the bacteria at once. The simplest technic is at least an important convenience.

On the other hand, dichloramin-T has some material disadvantages. The solutions must be prepared with some care, and must be fairly fresh, or else tested for the presence of available chlorin. The application causes considerable smarting and burning. This, however, disappears promptly, and can generally be tolerated. On repeated application, it is liable to irritate the skin.

TABLE 1.—TWO PER CENT. DICHLORAMIN-T IN LIQUID SOLVENTS: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

Solvent	Carbon Tetrachlorid	Chlorcosane	Liquid Petrolatum	Kerosene	Olive Oil
No. of samples tried...	1	2	4	1	1
Period after mixing:					
At once..............	98	100	50 to 100	47	48
1 hour..............	..	86			
1 day..............	97	81 to 94	50 to 78	13	25
3 days..............	..	85 to 96	....	10	17
1 week..............	94	65 to 85	32 to 50	8	8
1 month.........	86	60	33	..	7
Later..............	7 weeks:79	2 mo.:34 4 mo.:16 to 19	2 mo.:29	..	4 mo.:4

These disadvantages are rather minor, in most cases. Certain physical limitations are more serious in connection with burns. The large, open surfaces require protection against mechanical irritation and access of air, and this the dichloramin-T-chlorcosane solution fails to furnish. On the contrary, this solution is absorbed by the dressings, which are then glued by the wound secretions, producing pain and injury when the dressings are changed. Paraffined lace-mesh gauze does not avoid this effectively.

These drawbacks were especially conspicuous in the case of the very painful and slowly healing "mustard gas" (dichlorethylsulphid) burns that came under my observation. When these burns reach the ulcerative stage, they become so sensitive that they have to be protected by thick petrolatum dressings, especially at night. These are undesirable, since they furnish protection to the bacteria as well as to the tissues. Superficial infection therefore flourishes, and the healing must be delayed. It was attempted to compromise the matter, either by alternating the antiseptic and protective dressings or by applying a petrolatum dressing to the wound after it had been painted with dichloramin-T-chlorcosane solution (generally of 2 per cent. strength).

TABLE 2.—TWO PER CENT DICHLORAMIN-T IN PETROLATUM AND IN PARAFFIN OINTMENT: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

Color of Petrolatum Period after Mixing:	"Superla White"	"Ivory White"	"Onyx"	"Topaz"	"Amber"	"Yellow"	Paraffin Ointment 3:7 (2 Series)
At once.	15	16; 12	10	12	13	20	61-71
1 day....	10	11; 8	5	6	7	13	68
1 week...	7	8; 4	3	6	6	7	50-61
1 month	..	......	..	..	..	5	

It was known, of course, that dichloramin-T is gradually destroyed by ordinary petrolatum; but it was hoped that the destruction would be slow enough so that some of the antiseptic would last from one dressing to the next. Subsequent chemical study of the problem showed that this expectation is not realized, and that the application of ordinary petrolatum over dichloramin-T really amounts merely to alternation of antiseptic and protective treatment.

This prompted a more detailed study of the destruction of dichloramin-T by petrolatum and various solvents. This resulted in the working out of a special petrolatum medium which was found to be sufficiently compatible with dichloramin-T for surgical purposes, so that it may be applied either mixed directly with the dichloramin-T or as a protective dressing over the dichloramin-T.

Attention may be called to the fact that liquid and semiliquid mixtures of petrolatum with active drugs are not subject to the same limitations as is the incorporation of these drugs into solid paraffin. Solid paraffin prevents adequate contact of the mass of the antiseptic with the wound. On the other hand, the layers of liquid and semiliquid mediums in contact with the wounds are continuously changed, so that good contact is secured.

RATE OF DESTRUCTION OF DICHLORAMIN-T IN VARIOUS SOLVENTS

The deterioration was estimated by the changes in the "available chlorin," occurring at successive periods in solutions or mixtures containing originally 2 per cent. of dichloramin-T. I am indebted to Miss J. R. Collacott for these determinations.

Estimation of "Available Chlorin."—This was carried out essentially by the method described in New and Nonofficial Remedies, 1918, p. 158. To duplicate 5 c.c. or 5 gm. samples of the mixtures to be tested, there are added 5 c.c. of glacial acetic acid, 10 c.c. of 10 per cent. potassium iodid, and sufficient carbon tetrachlorid or chloroform to thin the material (usually about 5 c.c.); then a few drops of starch test-solution, and finally, from a buret, sufficient tenth-normal sodium thiosulphate solution to discharge the color.

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* From the pharmacologic laboratotry of the Western Reserve University School of Medicine.

* This investigation was supported by a grant from the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association.

Each cubic centimeter of tenth-normal sodium thiosulphate solution corresponds to 0.0177 gm. of available chlorin.

The results are presented in terms of percentage of the amount of available chlorin that should have been liberated, according to the quantity of dichloramin-T originally added.

Three samples of dichloramin-T (Abbott and Squibb), two samples of chlorcosane (Abbott and Squibb) and two samples of liquid petrolatum (Squibb and Stanolind), and five samples of petrolatum (Stanolind) and one of unknown manufacture were used, with practically identical results for each instance.

Liquid Solvents.—The rate of deterioration is shown by Table 1. Carbon tetrachlorid gives the most stable solutions. Chlorcosane solutions keep practically perfect for three days, and are fairly active for a month. Liquid petrolatum solutions show some loss at once, but would preserve a fair efficiency for a month. Kerosene is surprisingly destructive, even more so than olive oil.

Petrolatum.—Commercial petrolatums are highly destructive for dichloramin-T: so much so that the efficiency is at once practically completely destroyed. This is equally true for a series of six samples representing different depth of colors, so that the coloring impurities are not concerned. This is shown in Table 2.

TABLE 3.—TWO PER CENT. DICHLORAMIN-T IN CHLORCOSANE, OVERLAID WITH 20 GM. OF PETROLATUM, ETC.: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

	Liquid Petrolatum	White Petrolatum (2 Brands)	Yellow Petrolatum	Paraffin Ointment 3:7
At once	100	46-68	98	100
1 hour	95	13-62	42	99
1 day	101	38		
3 days	...	2-7	14	
1 week	87	3	8	60

The last column contrasts this with a "paraffin ointment 3:7" prepared by mixing 30 parts of melted surgical paraffin wax with 70 parts of liquid petrolatum (the Stanolind brands were used). There is considerable deterioration on mixing, but a practical efficiency is maintained for a week.

The physical properties of the paraffin ointment are fairly satisfactory, although it is rather more solid and damp than the commercial petrolatums.

Chlorcosane Solution Overlaid with Petrolatum, Etc.—In order to imitate somewhat the application of a petrolatum dressing over a dichloramin-T dressing, 5 c.c. of chlorcosane containing 2 per cent. of dichloramin-T were placed in bottles with 20 gm. of petrolatum, etc., without mixing. After definite periods, these mixtures were thinned with carbon tetrachlorid or chloroform, and titrated.

The results, reproduced in Table 3, again show the inferiority of petrolatum, which may destroy most of the dichloramin-T in an hour. Both the paraffin ointment 3:7 and the liquid petrolatum were satisfactory.

CONCLUSIONS

An ointment of 3 parts of surgical paraffin and 7 parts of liquid petrolatum has relatively little destructive action on dichloramin-T and can be used as a protective dressing on wounds (burns) treated with dichloramin-T-chlorcosane solution, and even as a basis for a dichloramin-T ointment.

Ordinary petrolatum, irrespective of its color, is very destructive of dichloramin-T, and cannot be used effectively in connection with it.

Liquid petrolatum can be used in emergencies as a vehicle for dichloramin-T, although it is inferior to chlorcosane.

Solutions of dichloramin-T in carbon tetrachlorid are very stable, while those in kerosene or in olive oil deteriorate very rapidly.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE METHOD OF GIVING INTRAVENOUS INFUSIONS

C. S. BLUEMEL, M.A., M.D., DENVER

In giving intravenous infusions in large numbers to dementia praecox patients and morphin addicts, I found it necessary to simplify the usual technic. This simplified technic gets rid of much of the awkward paraphernalia commonly required, and insures cleanliness in giving the infusions.

PREPARATION OF THE SALINE SOLUTION

Nine gm. of U. S. P. sodium chlorid are weighed out and transferred to a small test tube. The salt is shaken down, and the height to which it comes in the tube is marked with a file or label. The test tube then serves as a 9 gm. measure. A number of new quart medicine bottles are washed clean, and 9 gm. of salt are put in each bottle. The bottles are then filled with freshly distilled water to a previously determined and permanently indicated 1,000 c.c. mark. The resultant solution of sodium chlorid is 0.9 per cent. and is of physiologic strength. If a weaker solution is required, or if the bottles do not hold quite 1,000 c.c., the amount of chlorid is, of course, reduced accordingly.[1]

When the solution has been prepared, the bottle is closed with a two-hole rubber stopper. One hole of the stopper carries a piece of glass tubing of sufficient length to reach to the bottom of the bottle. The other hole carries a piece of tubing that projects an inch or more inside the bottle, and extends 2 or 3 inches on the outside. When later the bottle is inverted, the fluid flows out through the shorter tube, while air flows through the longer one to replace it.

When a sufficient number of solutions have been prepared, they are sterilized by boiling for an hour or more in a water-bath. When the solutions have cooled nearly to body temperature, they are ready for intravenous administration. They can, of course, be kept at the required temperature for any length of time by adjusting the flame beneath the water-bath.

ADMINISTRATION OF THE INTRAVENOUS INFUSION

When an intravenous infusion is to be given, a bottle is taken from the water-bath and placed in a sling or holder made of copper wire or string. The sling consists of a loop round the neck of the bottle and a larger loop round the base. Projecting from the larger loop there is a small loop or hook by means of which the bottle is hung in an inverted position from some convenient object. Before the bottle is inverted, the rubber stopper can be made more secure by fastening it with a strip of adhesive tape that has been split for a short distance in the middle so that it can be passed over the glass tubing. The adhesive is then fastened to the top of the stopper and to the sides of the neck of the bottle.

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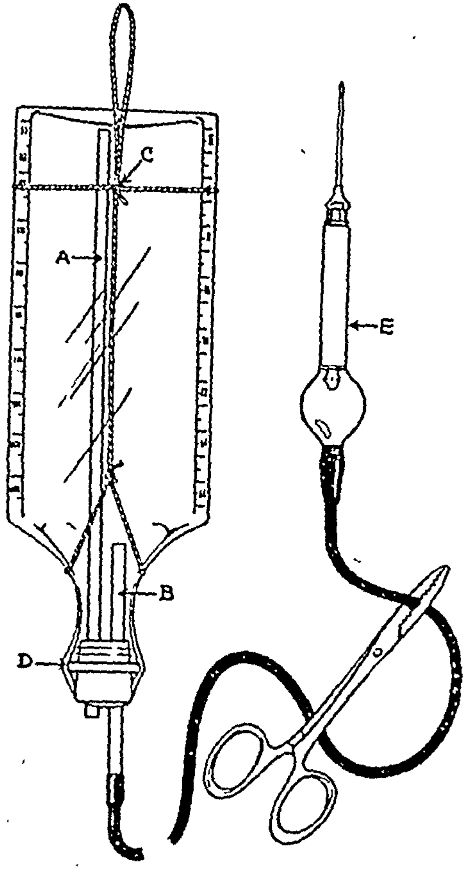
[1] The sodium chlorid should be purchased in bottles, not cardboard drums. Salt put up in cardboard containers is usually contaminated with little flakes of foreign matter. The prepared tablets of sodium chlorid can of course be used instead of the granular salt. The objections to them are that they are not readily soluble, and that only the smaller tablets will enter the mouth of the average quart medicine bottle.

To the projecting length of glass tubing there is then attached a piece of sterilized rubber tubing about 6 or 8 feet in length. A glass stem, or "observation tube," carrying a No. 17 or No. 18 Lüer needle is then attached to the other end of the rubber tubing (the observation tube and the needle being, of course, also sterilized). The lumen of the observation tube is expanded at one point to a sphere, and this sphere acts as an air trap by arresting bubbles that come down with the fluid. A hemostat is clamped to the rubber tubing a few inches from the observation tube.

The bottle is hung at any convenient height above the patient within a range of from 2 to 5 feet. The hemostat is released and enough fluid is allowed to flow through the needle to expel the air from the rubber tubing. The hemostat is then clamped again while the patient's arm is being prepared.



Apparatus for giving intravenous infusions *A*, air inlet tube; *B*, outlet tube for solution; *C*, sling for suspending bottle; *D*, adhesive tape securing rubber stopper; *E*, glass observation tube carrying Lüer needle.

A rubber bandage is placed round the patient's upper arm, and the veins are distended by repeated clenching of the fist. A suitable vein is selected, and the site sterilized with alcohol. The needle is then inserted into the vein with a single thrust, and when blood appears in the observation tube, the rubber bandage is removed from the arm and the hemostat is unclamped.

Difficulty in entering the vein is usually due to one or more of three causes: an insufficiently distended vein, a poorly illuminated field of operation, or (most commonly) a blunt needle.

Needles should be sharpened on a smooth stone and examined under a hand lens before they are used. A blunt needle will either push a vein aside or will rip it instead of puncturing it.

When the solution is flowing freely, a "thrill" can be felt by placing a finger on the vein near the point of the needle. The presence of a clear passage into the vein can also be determined at any time by drawing blood from the vein into the observation tube. This is accomplished by pinching off the rubber tubing a few inches from the needle, then momentarily pinching and releasing the short length of tubing that has thus been shut off. As the tubing is released, it aspirates blood into the observation tube. (This pinching process can be readily effected with one hand, the little finger pinching off the tube against the palm of the hand, and the thumb and forefinger performing the aspirating movement.) The flow of the fluid can be further checked by observing the air slowly bubbling into the bottle through the longer length of glass tubing; and also, of course, by observing the gradual descent of the upper level of the fluid. An interruption in the flow of the fluid is usually due to tilting the bevel of the needle against the wall of the vein.

When the bottle has emptied itself, the hemostat is once more clamped on the rubber tubing, the needle is withdrawn, a wad of cotton is pressed at the site of the puncture, and the arm is held elevated for a few minutes.

If desired, several infusions may be given simultaneously. The glass observation tube is raised to the proper angle on a wad of cotton and is held in place with a strip of adhesive tape. One is then free to attend to the next patient.

When the last infusion has been given, the rubber tubing should be placed in a clean glass jar. If the tubing is carefully handled, it will not be necessary to sterilize it with each using, for the inside of the tube cannot readily become contaminated.

When the rubber stopper is removed to refill the bottle, it should not be laid down so that the glass tubing comes in contact with a table top or other contaminated surface. The stopper should be placed in another sterile bottle, which is kept at hand for the purpose. When a number of bottles of solution are being prepared simultaneously, they may be sealed with one-hole rubber stoppers, the hole being lightly plugged with cotton. The double-hole stopper with the glass tubing can then be transferred from bottle to bottle as the infusions are given.

ADVANTAGES

The two great advantages secured by giving intravenous infusions from a medicine bottle in the manner described are cleanliness and simplicity:

Cleanliness.—If the bottles are filled direct from the still, the only possible source of contamination is the salt, and a germ would have to be pretty hardy and weather-beaten to have maintained its existence in contact with salt. The solutions are thus practically sterile before they are sterilized, and after sterilizing they are never exposed to the air or slopped about in gravity tubes or open vessels. Since the outlet tube projects an inch or more into the bottle, it converts the neck of the bottle into a sediment chamber, and thus any foreign particles that may be present gravitate into the neck of the bottle instead of flowing into the outlet tube.

Simplicity.—The solutions are readily prepared, easily carried about, and quickly administered. Using the method described above, one can comfortably give five consecutive infusions in an hour.

900 Metropolitan Building.

A SIMPLE INFUSION DROP TUBE

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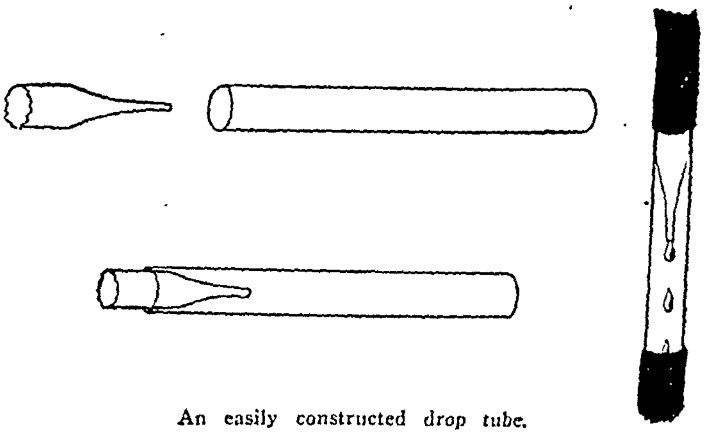
Finding the usual drop tube for saline infusions very delicate in construction, and the nurse having broken our entire supply of them, we were confronted with the necessity of constructing an apparatus that would indicate the rate of flow for a saline infusion which a serious case demanded immediately.



An easily constructed drop tube.

We found that an ordinary medicine dropper, filed off about an inch above the pointed end, will fit snugly into the end of an ordinary piece of three-eighths inch glass tubing. The rubber tubing is then drawn over them both, leaving the end of the medicine dropper in view within the glass tubing. Greater security is obtained by welding the two together with a flame, but this is not necessary.

TWO CASES OF SKULL FRACTURE WITH SECONDARY MASTOIDITIS AND MENINGITIS, AND IN ONE CASE BRAIN ABSCESS *

J. Morrisset Smith, M.D., New York

I saw these two cases with Dr. William Sharpe at the New York Polyclinic Hospital. Both were cases of skull fracture involving the base, with a secondary mastoiditis and meningitis, and in one case a brain abscess.

REPORT OF CASES

Case 1.—*History*.—A man, aged 43, white, cab driver, with negative family and past history, fell from the seat of a hansom cab, Oct. 31, 1917, and was picked up unconscious, bleeding from both ears.

Physical Examination.—He was well developed and well nourished, and was plethoric. He was still unconscious and bleeding from both ears. The blood was mixed with cerebrospinal fluid. He was in a state of shock, and spinal puncture revealed blood under marked pressure. The reflexes were exaggerated, especially on the left side. The Babinski reflex was present in the left foot. There were no convulsions and no twitchings. Ophthalmoscopic examination revealed marked edematous changes, with blurring of all fundus details and the nasal half and its margins, denoting marked local pressure changes.

First Operation.—November 2, Dr. Sharpe performed a left subtemporal decompression. The usual incision was made and the temporal muscle incised and retracted. The periosteum was separated, revealing a small bluish black area through the lower portion of the bone. The bone was rongeured, exposing the dura under very marked pressure. The dura was incised; a clot appeared through the opening, and bloody cerebrospinal fluid welled out. The clot was subdural; there was no apparent injury to the cortex, excepting that the vessels were markedly congested. The clot was removed and the wound closed as usual with two drains. The patient left the table in good condition. From the time of admission, except for occasional twitchings about the neck, shoulders and arms, unconsciousness was marked. The patient moved the arms, and turned to either side. Operation was decided on because of the prolonged unconsciousness, blood in the cerebrospinal fluid, and changes in the fundus oculi. The temperature was 102, pulse 94 and respiration 18. The patient regained consciousness at 2:30 p. m. (four hours after the operation).

Second Operation.—Sixteen days later I examined the patient and found a tender postauricular swelling under the right ear, a profuse discharge from the canal, the neck partially rigid, and Kernig's sign present. The patient was stuporous but could be momentarily aroused. The spinal fluid was cloudy. No bacteria were revealed on culture of fluid. The temperature ranged from 99.5 to 101. A diagnosis of mastoiditis and meningitis was made and a mastoid operation performed. Exposure of the mastoid cortex revealed a fracture running below the temporal ridge forward to the spine of Henle. The entire mastoid cavity was necrotic and filled with pus. The fracture extended down into the angle between the cerebral and the cerebellar dura. The mastoid cells were thoroughly exenterated, and the usual closure and dressing made. The patient died two days later of meningitis.

Case 2.—*History*.—A woman, aged 40, white, with negative family and past history, was injured in an automobile accident, Oct. 31, 1917, and bled from the right ear. She was admitted to the Polyclinic Hospital one week later.

Examination.—The patient was well developed and well nourished. There were ecchymoses of both eyes and the mastoid regions. There was a scalp wound 3 inches long in the occipital region. There were multiple contusions with ecchymoses in the neck, trunk and extremities. The knee jerk was increased. The abdominal reflexes were absent. There was no Babinski reflex. Lumbar puncture revealed the fluid bloody and under high pressure. The pupils were slightly enlarged, the left being the larger of the two. On admission the temperature was 101.6 and the pulse 84. In the right eye there were mild edematous changes of the upper nasal quadrant; in the left eye, no changes.

A second lumbar puncture disclosed cloudy spinal fluid with symptoms of meningitis.

I saw this patient about three weeks after admission, and my examination revealed almost the identical condition as in Case 1, an unquestionable mastoiditis with marked postauricular tenderness, slight edema, profuse discharge from the canal, haziness of the mental condition, a positive Kernig's sign, the neck stiff, and cloudy spinal fluid, with a report of no bacteria.

Operation was deferred at this time, and the patient was observed for two weeks. The general condition remained about the same. Another lumbar puncture was done, and the patient showed a slight improvement with the mastoiditis more marked.

Operation.—At this point I decided to drain the mastoid. Instead of performing a complete mastoid operation as in the first case I very quickly exposed the cortex, and there was a fracture running forward to the spine of Henle just under the temporal ridge. I then removed the cortex, avoiding the hammer and chisel, and stopped.

The patient immediately began to improve and steadily gained both physically and mentally, until she was finally taken home, abount two months later, with the mastoid completely healed.

She showed continuous improvement until Feb. 18, 1918, while in the neurologic clinic to see Dr. Sharpe, when she developed epileptic seizures beginning in the face, right arm and leg, and then general convulsions lasting half a minute. She was admitted to the ward for observation. There were no seizures in three days, and she again went home.

March 8, she was again admitted, showing right facial paralysis with impaired sensation; motor and sensory aphasia; weakness with increased reflexes in the right arm; headache, and tenderness over the left frontoparietal region. The pulse and temperature were normal. The patient was weak and lethargic. Consciousness was not impaired.

Second Operation.—March 18, Dr. Sharpe performed a left subtemporal decompression and drainage. The usual incision was made. The dura was thick and not transparent, the fluid was not under tension, and very little cerebrospinal fluid exuded. The dura was adherent to the cortex, which was grayish and showed signs of previous meningitis. The cortex did not pulsate.

The left frontoparietal region was explored with a hollow needle. A large abscess cavity was found about 4 cm. from the surface of the cortex. A large amount of thick, grayish pus was evacuated which showed pure culture of streptococcus. The usual closure was made with drainage. The patient finally died of meningitis three weeks later.

COMMENT

Was there a true meningitis in these cases, presenting all the clinical symptoms plus a cloudy spinal fluid but no bacteria? Owing to the fact that some patients recover, opinions differ as to the presence of real meningitis.

I think that a bacterial meningitis is present but that the infection becomes localized or walled off, as in these cases, and that this accounts for the absence of free bacteria in the fluid as well as recovery in some of the cases, remembering that in a diffuse meningitis they die without fail.

The two patients showed some improvement following lumbar puncture. While repeated lumbar punctures have been of no avail in cases of diffuse meningitis, it is worth trying as a therapeutic measure when there is evidence of localization.

The prognosis at best in cases of this type is very poor, and the decision as to the best thing to do for the patient is a difficult one. Should I again be confronted by a similar situation I would follow the method used in Case 2, since we establish drainage by simply removing the cortex and do not interfere with the protecting wall which nature may have thrown around the line of fracture.

45 East Sixty-Second Street.

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* Reported before the New York Academy of Medicine, March 13, 1919.

SUPERIORITY OF THE METHOD OF ICE-BOX FIXATION IN THE WASSERMANN TEST *

Oscar Berghausen, B.A., M.D., Cincinnati

In 1917, Smith and MacNeal reported results obtained in a comparative study of different antigens and of different temperatures of incubation in the Wassermann test. Last summer the method of ice-box fixation was employed at the Cincinnati General Hospital with such gratifying results that it is now employed as a routine. Previously the classical test in which three different antigens were used, a double unit of complement and amboceptor, in a final volume of 2.5 c.c., with incubation at 37 C. in a water bath, was employed. Comparative studies have convinced us that when small amounts of antigen are used with fixation at the low temperatures of 0 and 2 C., false positive reactions are avoided and reliable results are obtained.

PREPARATION OF ANTIGENS AND THE TECHNIC OF THE TEST

The cholesterinized antigen was prepared by treating 100 gm. of beef heart with 900 c.c. of alcohol in the usual way and adding 0.4 gm. of cholesterin to 100 c.c. of the extract. A dilution of 1:20 in physiologic sodium chlorid solution was used in the test, and its hemolytic, anticomplementary and antigenic properties were determined. The regular alcoholic extract antigen was prepared from a syphilitic heart, and a dilution of 1:10 was used in the test. The Noguchi acetone insoluble fraction was prepared from a beef heart extract, and a dilution of 1:20 was used in the test. The antigenic values were determined in the usual manner, except that over night fixation in the refrigerator was employed. This usually meant a fixation at 0 C., or slightly above this point, for a period of from eighteen to twenty hours. To avoid freezing, the racks were covered with a sterile towel. The next morning the racks were placed at room temperature to warm; then the suspension of sheep corpuscles (5 per cent.) was added, and the racks placed in a water bath at 37 C. for from ten to fifteen minutes. They were then removed and preliminary readings made. When hemolysis was complete in all the tubes of a single test, the reaction was reported as negative. Special studies to determine whether such serums contained sufficient natural amboceptor to dissolve an additional 0.2 c.c. of corpuscles disclosed that such a procedure was not advisable as a routine. When partial hemolysis occurred in all the tubes of a single test, a single unit of amboceptor was found sufficient. When no hemolysis occurred, a double unit of amboceptor was added. When the control tube was completely hemolyzed and the tubes containing the antigen were partially or completely inhibited, a single or double unit of amboceptor was added. Final readings were made after an incubation of from thirty to sixty minutes in the water bath at 37 C. The complement was prepared in the usual way by diluting guinea-pig serum 1:10 with salt water. A double unit of complement was employed. The unit of amboceptor was usually 0.1 c.c. of 1:1,000 immune rabbit serum. We aimed to have a final dilution of 2.5 c.c. when amboceptor was added. Such single tests as needed no additional amount of amboceptor had a final volume of slightly less than 2.5 c.c. Small amounts of antigen were usually employed, from 0.2 to 0.3 c.c., four to five times this amount still giving complete hemolysis with a normal serum and ice-box fixation. We apparently were dealing with a cholesterinized antigen which in these small amounts did not yield the false positive results so frequently described. Only 0.1 c.c. of serum was employed in the control tube, to determine the presence or absence of sufficient amount of natural antisheep amboceptor. When the serum is anticomplementary, this property is detected very easily. At present we are using a similar technic in the examination of spinal fluids, employing 0.5 c.c. for the test.

RESULTS OF THE TESTS

Although we have examined about 2,000 serums with the technic described above, we shall discuss in detail only the results obtained in the examination of 220 serums, since we had better opportunities for comparison.

In Table 1 it is shown that ice-box fixation gives 6 per cent. more positive reactions in known syphilitic cases, as compared to fixation in the water bath at 37 C. for one hour. In the latter method, 0.2 c.c. of serum was used in each tube; in the former, 0.1 c.c. This method was employed to determine whether or not inactivation of the serums tended to produce more negative reactions. Although twice the amount of serum was used in 2.5 c.c. volume in the water bath fixation method, the results were still inferior to those obtained with ice-box fixation.

TABLE 1.—SUMMARIZED RESULTS OF ONE HUNDRED AND FORTY-TWO TESTS ON SYPHILITIC PATIENTS

Fixation	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Water bath	91	64	51	36
Ice-box	100	70	42	30

In Table 2 it will be seen that the serum of seventy-eight patients definitely not syphilitic gave negative reactions, the technic being the same as that described under Table 1.

TABLE 2.—SUMMARIZED RESULTS OF SEVENTY-EIGHT TESTS ON PATIENTS NOT SYPHILITIC

Fixation	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Water bath	0	0	78	100
Ice-box	0	0	78	100

In Table 3 are given the results obtained by examining both active and inactive serum. The Hecht-Gradwohl modification was employed; in eight serums the hemolytic index was too low. The technic of the Wassermann tests was the same as described under Table 1, inactive serum being used.

TABLE 3.—COMPARATIVE RESULTS OF WASSERMANN AND HECHT TESTS ON ONE HUNDRED AND TEN SERUMS

Method	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Wassermann water bath fixation	37	33.6	73	66.4
Wassermann ice-box fixation	49	44.5	61	55.5
Hecht	35	34.3	67	65.7

In Table 4, comparative results with different antigens and ice-box fixation over varying lengths of time are tabulated. Ice-box fixation increases the number of positive reactions when alcoholic extracts are used, that is, such fixation enhances the value of the simple alcoholic extract. Smith and MacNeal[1] found a greater number of positive reactions with cholesterinized antigen. Possibly our results are due to the particular antigens used.

TABLE 4.—COMPARATIVE RESULTS WITH DIFFERENT ANTIGENS AND ICE-BOX FIXATION OVER VARYING LENGTHS OF TIME

Antigen	4 Hrs. Ice-Box Fixation			Over Night Ice-Box Fixation		
	Positive	Negative	Total	Positive	Negative	Total
Alcoholic	35	62	87	35	52	87
Cholesterinized	21	66	87	33	54	87

CONCLUSIONS

1. Ice-box fixation, from eighteen to twenty hours at 0 and 2 C., increases the number of positive reactions with serum of known syphilitic patients.
2. We have no evidence to show that it tends to cause false positive reactions.
3. In the examination of a large number of serums, ice-box fixation, simple alcoholic extract of a syphilitic organ being used as antigen, yields satisfactory results.

19 West Seventh Street.

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* From the Pathologic Department, Cincinnati General Hospital.

[1] Smith, J. W., and MacNeal, W. J.: J. Infect. Dis. 21: 233-243 (Sept.) 1917.

Defective Physique.—The defective physical condition of young men of draft age was largely due to neglect of proper supervision and guidance during their period of youth.—*Dr. L. Emmett Holt.*

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1918

SEVENTH ANNUAL REPORT

THE JOURNAL presents its seventh annual survey[1] of typhoid fever mortality in cities of the United States having more than 100,000 population. The cities included in the summary number sixty, and are the same as those reported on last year.[2]

TABLE 1.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION) *

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Chicago	1.4	1.7	5.2	8.2	15.8
Boston	2.5	2.9	3.5	8.0	16.0
Philadelphia	3.0	6.2	7.8	11.2	41.7
New York	3.7	4.0	3.8	8.0	13.5
Cleveland	4.7	7.1	5.3	10.0	15.7
St. Louis	7.2	7.5	9.4	12.1	14.7
Pittsburgh	9.8	11.2	8.6	15.9	65.0
Detroit	10 0	17.8	15.0	18.1	21.1
Baltimore	12.2	15.5	18.0	23.7	35.1

* The population estimates of the U. S. Census Bureau have been used in calculating the rates in this and the following tables. It should be noted, however, that the length of time since the 1910 census makes all population estimates more or less uncertain. The Census Bureau does not make any estimate of the population of Denver, Portland, Ore., Seattle and Spokane. The population of Washington, D. C., is estimated by an alternative method.

The nine large cities in Group 1, comprising about 15 per cent. of the total population of the country, show again a very notable improvement in their typhoid record. Chicago, Boston, Philadelphia, New York, Cleveland, Detroit and Baltimore, in fact, record the lowest typhoid rates yet reached in their sanitary history. A particularly encouraging item in this group is the marked reduction in Detroit, a city that for several years has had an excessive amount of typhoid for a Northern city.

Baltimore also shows marked improvement. Although this city is handicapped by its negro population and by other circumstances shared by most Southern cities, its improvement as respects typhoid is little short of marvelous. Its rate in 1918 was lower than the average 1906-1910 rate for any member of Group 1, and about one-third its own rate for that period. Undoubtedly the purification of the water supply has had much to do with typhoid diminution; but the steady and energetic efforts of the health department in other ways have undoubtedly had great influence. Baltimore probably suffers disproportionately from imported typhoid, since the neighboring rural districts seem to be rather heavily infected.

The city of New York issues the most complete and satisfactory statements regarding typhoid of any of this group. At the end of each quarter of the year a report is made in the *Weekly Bulletin* regarding the results of blood samples sent to the laboratory, of modes of infection as determined by investigation of individual cases, of immunization, etc. These reports are of great value both for determination of actual channels of infection and as furnishing a basis for frequent comparison. The report, for example, of typhoid for the third quarter of the year shows that thirty-seven cases were traced to contact with active cases of typhoid, and that there was a total of eighty-three contact cases and twenty-three due to milk contamination. One hundred and thirty-five cases were considered to be out-of-town infections. Considering the difficulty of tracing chronic carrier and other contact cases, these figures would seem to indicate that a very large proportion of the typhoid in New York City is due to contact and to milk contamination. An interesting outbreak of typhoid in an institution is described in one of the July numbers of the *Weekly Bulletin*. The New York reports furnish a model for other cities. It is doubtful, indeed, if there is any other large city in the world in which typhoid studies are so systematically conceived and so efficiently carried out. The effect is seen in the remarkable diminution in typhoid in New York City. The department wisely urges the more extensive practice of typhoid immunization as a means for further reducing typhoid prevalence. The following significant paragraph appears in an issue of the *Weekly Bulletin:*

> While it is the practice in most hospitals in this city to immunize student nurses, it is interesting to record that recently the failure of one institution to carry out this procedure resulted in the death of a nurse who had been caring for a typhoid fever patient. This death, like most other typhoid fever deaths, was entirely preventable, and it is to be blamed on those who did not enforce this proved measure of protection, since nurses are necessarily very much exposed.

Too great publicity cannot be given to the responsibility of hospital authorities for imposing typhoid immunization. Are other health departments doing as much as New York?

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Seattle	2.3	5.1	3.0	5.7	25.2
Los Angeles	2.8	5.2	3.1	10.7	19.0
Newark, N. J.	3.5	3.5	5.3	6.8	14.6
Cincinnati	4.1	4.1	3.4	7.8	30.1
San Francisco	4.6	4.9	3.4	13.6	27.3
Milwaukee	6.2	5.9	14.9	13.6	27.0
Minneapolis	7.6	5.9	5.8	10.6	32.1
Buffalo	7.8	10.1	10.9	15.4	22.8
Washington	11.9	13.2	12.6	17.2	36.7
New Orleans	20.1	23.0	23.4	20.9	35.6

Most of the cities in Group 2 (from 300,000 to 500,000 population) show improvement over the 1917 rates, the changes in Seattle and Los Angeles being especially noticeable. Every city in the group with one exception seems likely to have a lower record for the present five-year period than for the quinquennium

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[1] The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845, and March 16, 1918, p. 777.

[2] The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated on the basis of population estimates made according to the method of the U. S. Census Bureau (see, however, the note to Table 1). It may perhaps be noted that the figures kindly furnished us by the municipal officials include the deaths of nonresidents as well as residents occurring within the city limits. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13). It is probably true that in 1918 a number of cities suffered disproportionately from the importation of nonresident cases of typhoid. This is particularly the case with some cities that have had a mushroom growth of war industries in their immediate vicinity. It does not seem possible, however, to make any fair adjustment by deducting all nonresident deaths, especially since the general shifting of population has been unusually great and very uneven.

1911-1915. The exception is New Orleans, which remains in a rather mediocre position and has bettered its typhoid rate but little, if any, during the last ten years.

Milwaukee again makes a most excellent showing. This city remains a fine example of the success that may be reached in treating a badly polluted water by the chlorination process. The use of chlorin under the conditions existing in Milwaukee has its difficult administrative side, and it is greatly to the credit of the city authorities that they continue to exercise unceasing vigilance. Complaints of the odor of the water in Milwaukee seem to be rather frequent, but the health commissioner does not allow these to swerve him from his course. The statement is frankly made that while chlorin in the water is disagreeable and even obnoxious, it is necessary and is not poisonous. The occasional occurrence of unpleasant odors is certainly a small price to pay for the relatively high degree of security from water-borne infection that Milwaukee enjoys. It should be noted also that in Milwaukee, as in other cities, by no means all the odors in the water are to be charged up against the chlorination process. The refuse from manufacturing industries must take its share.

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Rochester, N. Y.	1.9	3.1	5.1	9.6	12.8
St. Paul.............	3.5	2.4	4.9	9.2	18.3
Jersey City..........	4.1	3.2	6.8	7.2	12.6
Providence, R. I.	4.5	5.4	5.1	10.2	14.3
Portland, Ore.	5.6	5.5	4.6	10.8	23.2
Indianapolis.........	6.6	10.0	26.6	20.5	30.4
Denver...............	8.7	5.1	7.2	12.0	37.5
Columbus, Ohio.....	8.9	7.6	13.4	15.8	40.0
Louisville, Ky.	12.4	12.2	9.7	19.7	52.7
Kansas City, Mo. ...	13.7	10.0	10.6	16.2	35.6

Typhoid in Washington has remained at about the same level for several years. Washington, like Baltimore, probably suffers more than some cities from being surrounded by a zone of communities that contribute infection to the city population. An outbreak in Alexandria, Va., is thought to have helped to swell the list of typhoid cases in Washington during the past year.

Minneapolis has a somewhat higher rate than in 1917 and 1916. Raw milk is thought to have caused some cases in Minneapolis at the beginning of 1918.

Group 3 (from 200,000 to 300,000 population), which last year made an exceptionally good record, now shows an increase in the typhoid rate in seven out of ten cities. Except in Kansas City and Denver, however, the increases are not very great. Four of the cities report rates under 5, as against 3 in the 1917 table.

Indianapolis, which prior to 1917 had a high typhoid rate, now seems well established in the same rank with other Northern cities. The population estimate of Denver is quite uncertain. The Census Bureau [illegible] no estimate for the population of that city, [illegible] the same thing is true of Portland, Ore. Louis[illegible] comes off especially well this year, considering [illegible] war conditions that have prevailed in the neigh[illegible] that city. The typhoid increase in Kansas [illegible] to be attributable to an accident to the water chlorination plant in July. Apparently raw river water entered the distributing mains at that time, and the bacterial examinations showed the presence of *B. coli*.

The cities of Group 4 make, on the whole, a better showing than in 1917. New Haven more than maintains its excellent showing of the past two years. Fall River cuts its 1917 rate in half. Paterson, which last year suffered from peculiar local conditions, again resumes its place as one of the leaders of this group. Toledo for the second successive year has a typhoid rate under 10. It seems evident that the conditions in Toledo which gave that city unenviable notoriety for some years before 1917 have been largely remedied. The Ohio State Board of Health seems to be keeping close watch on the Toledo water supply.

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 125,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Paterson, N. J.	2.1	11.3	1.4	9.1	19.3
Worcester, Mass.	4.6	4.8	3.7	5.0	11.8
Oakland, Calif.	4.7	1.9	4.0	8.7	21.5
Omaha...............	5.0	6.4	5.1	14.9	40.7
New Haven, Conn. ..	5.2	9.2	8.0	18.2	30.8
Scranton, Pa.	5.2	6.0	5.4	9.3	31.5
Fall River, Mass.	7.0	16.9	10.9	13.4	13.5
Spokane, Wash.	9.1	7.1	2.0	17.1	50.3
Syracuse, N. Y.	9.3	6.3	12.2	12.3	15.6
Toledo, Ohio.........	9.9	9.7	22.9	31.4	37.5
Atlanta, Ga.	14.4	16.8	17.9	31.4	58.4
Memphis, Tenn.	14.9	21.1	36.3	42.5	35.3
Birmingham, Ala. ...	31.9	54.1	42.6	....	....
Richmond, Va.	65.3	7.0	24.1	15.7	34.0

Atlanta and Memphis again make good records for Southern cities. The campaign against typhoid by the Memphis health department is certainly having its effect. Atlanta seems to have had trouble with its water supply from running its filters at too high a rate, leading at one time to deterioration in the bacterial quality of the filtered water. A chlorinating plant was installed, however, and such danger as existed from a contaminated water supply does not seem to have been greatly prolonged. It is a question, indeed, how much, if any, typhoid was caused from overburdening the filters. The lower typhoid death rate in Atlanta does not indicate that very much trouble actually occurred from this source. Birmingham still has twice as much typhoid as Atlanta and Memphis.

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Lowell, Mass.	1.8	6.9	11.4	10.2	13.9
Cambridge, Mass. ...	2.7	4.4	0.9	4.0	9.8
Springfield, Mass. ...	3.6	6.4	4.7	17.6	....
Camden, N. J.	3.6	3.7	11.3	4.5	....
Bridgeport, Mass. ...	3.9	6.1	9.0	5.0	10.3
Tacoma, Wash.	5.7	2.5	3.5	10.1	....
Dayton, Ohio........	6.9	13.7	14.7	14.8	22.5
Hartford, Conn.	7.0	13.3	6.3	15.9	19.0
Salt Lake City.......	7.1	18.1	10.2	13.2	....
New Bedford, Mass..	8.0	5.7	4.2	15.0	16.1
Trenton, N. J.	9.4	12.3	6.3	22.3	....
Grand Rapids, Mich.	10.3	12.2	15.6	25.5	20.7
Albany, N. Y.	10.7	10.5	7.7	18.6	17.4
Reading, Pa.	12.3	7.4	18.7	31.9	42.0
Dallas, Texas........	12.6	19.4	27.5	....	....
Nashville, Tenn.	32.7	18.3	27.3	40.2	61.2
San Antonio, Texas.	51.3	25.7	16.9	29.5	....

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* From the Pa

Richmond has a sad lapse. We are not aware that any report on the high typhoid fever in Richmond in 1918 has been published. A rate of 65, however, should not be allowed to pass without a searching inquiry into causes and remedy.

Group 5 (from 100,000 to 125,000 population) shows a marked relative improvement over 1917. Dayton, which for some years has had a high rate for a Northern city, gives evidence of changing conditions. The improvement in that city is attributed by the local authorities to careful supervision of the private water supplies in and about the city. Many private wells and springs are said to have been condemned on account of their contaminated condition. Dallas, a city that has the advantage of employing an expert director of sanitation, has reduced its typhoid rate materially and ranks as one of the very best of Southern cities. With the present rate of improvement, Dallas may soon serve as a model for other communities. There is no doubt that, simply as an advertisement, expert health supervision will repay any community. Grand Rapids continues the steady improvement of the past few years, and seems finally to be getting the good results from the operation of its filtration plant that were expected earlier.

TABLE 6.—DEATH RATES FROM TYPHOID IN 1918

First Rank (Under 5.0)			
Chicago	1.4	Springfield, Mass.	3.6
Lowell, Mass.	1.8	Camden, N. J.	3.6
Rochester, N. Y.	1.9	New York	3.7
Paterson, N. J.	2.1	Bridgeport, Conn.	3.9
Seattle	2.3	Cincinnati	4.1
Boston	2.5	Jersey City	4.1
Cambridge, Mass.	2.7	Providence, R. I.	4.5
Los Angeles	2.8	San Francisco	1.6
Philadelphia	3.0	Worcester, Mass.	4.6
Newark, N. J.	3.5	Oakland, Calif.	4.7
St. Paul	3.5	Cleveland	4.7
Second Rank (from 5.0 to 10.0)			
Omaha	5.0	St. Louis	7.2
New Haven, Conn.	5.2	Minneapolis	7.6
Scranton, Pa.	5.2	Buffalo	7.8
Portland, Ore.	5.6	New Bedford, Mass.	8.0
Tacoma, Wash.	5.7	Denver	8.7
Milwaukee	6.2	Columbus, Ohio	8.9
Indianapolis	6.6	Spokane, Wash.	9.1
Dayton, Ohio	6.9	Syracuse, N. Y.	9.3
Hartford, Conn.	7.0	Trenton, N. J.	9.4
Fall River, Mass.	7.0	Pittsburgh	9.8
Salt Lake City	7.1	Toledo, Ohio	9.9
Third Rank (from 10.0 to 20.0)			
Detroit	10.0	Louisville, Ky.	12.4
Grand Rapids, Mich.	10.3	Dallas, Texas	12.6
Albany, N. Y.	10.7	Kansas City, Mo.	13.7
Washington, D. C.	11.9	Atlanta, Ga.	14.4
Baltimore	12.2	Memphis, Tenn.	14.9
Reading, Pa.	12.3		
Fourth Rank (Over 20.0)			
New Orleans	20.1	San Antonio, Texas	54.3
Birmingham, Ala.	31.9	Richmond, Va.	65.3
Nashville, Tenn.	32.7		

Two cities in the group, Nashville and San Antonio, have experienced considerable typhoid increases, although the 1916-1918 average in Nashville is considerably below that of earlier years. There is reason to believe that the actual population in Nashville was considerably higher than the estimated population; and there seems no doubt that the Nashville typhoid rate was unduly swollen by cases brought in from war industry plants in the vicinity. San Antonio reaches the high figure of 54.3, more than double the preceding year. What was the matter? Will the chamber of commerce of that town advertise the typhoid rate in Northern papers, when presenting the claims of San Antonio as a winter resort? Aside from the two cities last named, the group as a whole compares favorably with the groups of cities with larger population.

In 1918, forty cities had a lower typhoid rate than in 1917; twenty, a higher. Forty-four cities had a typhoid rate under 10, as compared with thirty-seven in 1917, thirty-five in 1916 and thirty-two in 1915. In twenty-two cities the death rate from typhoid fever was under 5.0 during 1918; this was true of only fourteen cities in 1917.

TABLE 7.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917 AND 1918

Group	Year	No. of Cities	Total Population	No. of Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
Total....	1916	60	24,667,919	2,011	8.1
Total....	1917	60	25,220,076	1,812	7.2
Total....	1918	60	25,458,656	1,660	6.5

Nine cities reached a rate of 3.0 or less in 1918: Chicago, Lowell, Rochester, Paterson, Seattle, Boston, Cambridge, Los Angeles and Philadelphia.

Again we are encouraged to note the further lowering in the total typhoid rate of the fifty-seven cities whose records are available. Since a large proportion of the males belonging to the age groups especially susceptible to typhoid were in army camps during most of the year, much stress cannot be laid on a slight reduction in typhoid rates. But the facts, so far as they go, indicate a unique condition. It has been the history during previous wars that typhoid has not only prevailed extensively in army camps, but has spread thence to the civilian population. The figures for 1918 indicate at least that no material increase in typhoid has occurred generally in civilian communities. Antityphoid vaccination of the military forces of the United States has not merely protected soldiers in camps, but has probably prevented the spread of the disease throughout the civilian population. This is a great achievement.

TABLE 8.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1918)

	Total Population (57 Cities*) *Estimated by U. S.* Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,996,035	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,093,993	2,775	12.56
1913	22,642,972	2,892	12.77
1914	23,191,951	2,408	10.38
1915	23,740,930	2,068	8.71
1916	24,205,359	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23

* Three cities are omitted from this summary because data for the full period are not available.

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SATURDAY, APRIL 5, 1919

TYPHOID IN AMERICAN CITIES

The seventh annual summary of the typhoid death rates in large American cities appears in this issue of The Journal,[1] and constitutes an encouraging record of sanitary achievement. It might have been anticipated that typhoid would increase in this country during 1918. The absorption of national interest and energy in the war, the absence of thousands of physicians and sanitarians from their accustomed posts, the almost unavoidable interference in many places with normal housing and industrial conditions, the hasty construction of industrial towns in the neighborhood of many cities, and the unprecedented shifting of population, giving the typhoid carriers an opportunity for maximum contact, are all factors that it might have been reasonably supposed would cooperate in producing a general typhoid rate higher than for several years past. It is true that the greatest source of typhoid infection in all previous wars has been removed, namely, the excessive prevalence of typhoid in army camps and its spread from these to the civilian community. Antityphoid inoculation has changed all that. At the same time the other disturbing wartime factors mentioned above are sufficiently important to arouse apprehension as to their effect on typhoid dissemination. But whatever effect they may have had has been more than counterbalanced by the forces tending to bring about a reduction in this disease. Typhoid fever reached a lower ebb in American cities in 1918 than in any other year for which record is available. American health officers deserve great credit for the unremitting work that has made this result possible in the face of great difficulties.

The data gathered by The Journal for the past seven years are of interest and significance in many other ways. One legitimate inference seems to be that typhoid fever in the United States has become to a great extent a rural rather than an urban disease. There is little doubt from the practically unanimous testimony of health officers as well as from other sources of information that a large part of the typhoid infection occurring in American cities originates in rural districts. Death returns especially show that a relatively large proportion of the typhoid deaths in cities is due to infection contracted in other communities. Both patients sick with typhoid and typhoid-contaminated foodstuffs are imported into the city with far greater frequency than they are exported. In a sense this is perhaps the aftermath of long years of city mismanagement of water supplies which for several decades made cities like Philadelphia, Pittsburgh and Chicago distributing centers for typhoid bacilli, and fastened typhoid firmly on the rural regions for miles about. Now that most American cities have practically eliminated the danger of water-borne typhoid for their own citizens, they continue to suffer from typhoid infection shipped in from rural communities in which the seed was originally implanted through the agency of some contaminated city water supply.

At all events, it is fair to conclude that so far at least as many Northern cities are concerned, further improvement in typhoid rates will have to come very largely through improvement in typhoid conditions in the adjoining suburban and rural districts. Especially is this true of the regions from which such important foodstuffs as milk are drawn. Reduction in typhoid in country places will surely be followed by a reduction in the cities to which they are tributary.

To this end it is desirable that more cities should embark, as New York has done, on detailed typhoid studies. In many places typhoid has shrunk to a point at which it is manageable, and each case can be subjected to a more or less careful study. Such observations not only will be of value in detecting local sources of infection, but also will add to the general understanding of typhoid epidemiology. It is to be hoped that many health officials will find it possible to have made and put on record results of inquiries concerning each case of typhoid developing in the municipality. The relative share of urban and rural sources of infection and of other factors can be determined with exactness only in this way.

THE ETIOLOGY OF INFLUENZA

The pandemic of influenza has been the subject of investigation to an unusual extent, not only because of its alarming character and widespread prevalence, but also because it has occurred at a time when great governmental agencies, like the medical departments of armies, were necessarily directed to the study. At the time of the pandemic of 1889-1890, the bacteriologic factors possibly associated with the disease were far from being recognized to the extent that is true at the present time. Pfeiffer's bacillus, the so-called *B. influenzae*, was not described until 1892. Even cursory acquaintance with the literature of influenza since that date cannot fail to indicate the uncertainty that has existed regarding the possible etiologic significance of this micro-organism. The most recent studies undertaken in connection with the outbreaks of influenza during the past year continue to give indications of this uncertainty.[1] Far from regarding the Pfeiffer bacillus as the primary infective agent, many, if not most investigators still insist that influenza is a disease, to quote Kinsella, caused by some as yet undiscovered agent, which produces inflammation of the entire respiratory tract, and effects a very profound lowering of resistance, which is perhaps expressed by the constant and striking leukopenia. Lack of reaction is the most noticeable clinical feature. Under these circumstances, invasion follows by the various bacteria that are capable of becoming pathogenic, although harmless in the normal mouth.

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[1] Page 997.

It is still too early to marshal the mooted facts into a decisive order. Meanwhile, it can only be helpful to compare the findings regarding influenza which are being arrayed from many quarters as the result of the outbreak of 1918. By contrasting the observations made in diverse places and many lands it should become possible to distinguish the accidental from the omnipresent factors and, at length, formulate more definite theses which may direct further experimental investigations. Accordingly, it is interesting to learn the recently published conclusions of the Kitasato Institute for Infectious Diseases in Tokyo regarding the cause of the influenza that prevailed in Japan last year.[2] The clinical findings seem to agree with those that were obtained in the last pandemic; and according to the Japanese investigators the epidemiologic and clinical data tend to identify the influenza that has prevailed in Japan with the disease recently current in Europe and America.

The bacteriologists of the Kitasato Institute claim to have found *B. influenzae* in almost pure culture in the nasal cavities of patients, while healthy persons do not harbor it in the same degree. Serologic and other laboratory studies lead the Japanese investigators to the conclusion that "this pandemic of the influenza is caused by Pfeiffer's bacillus." They argue that the nature of this organism is such that it affords only a weak immunity to the host; nevertheless, they add, this fact need not disprove its pathogenicity.

The validity of such contributions must remain in abeyance until such rather positive views have been considered in comparison with data gathered from diverse other sources. In a review of their experience with influenza in the Medical Clinic of the Johns Hopkins University, Bloomfield and Harrop[3] also come to the conclusion that epidemic influenza in 1918 is clinically identical with the disease seen in previous pandemics. It is not primarily a local disease of the respiratory tract. They argue that it presents a definite and characteristic clinical picture quite apart from the pulmonary complications; the main features of uncomplicated cases being a constant set of symptoms, characteristic erythema and appearance of the mouth, fever of definite duration, and leukopenia. Bloomfield and Harrop frankly assert, however, that proof is lacking that the Pfeiffer bacillus is the primary cause of uncomplicated influenza. The same conclusion has been reached by Howard[4] of the Johns Hopkins Clinic, who believes with practically all American investigators that *B. influenzae* is merely a secondary invader, though in some cases it may be a frequent cause of terminal bronchopneumonia.

Pritchett and Stillman[5] have found *B. influenzae* present in the mouths of 43 per cent. of normal individuals examined in the personnel of a large hospital. On the other hand, they cultivated the organism from the mouth of 93 per cent. of cases of influenza and bronchopneumonia. This high incidence of the Pfeiffer bacillus in the upper respiratory tract during the epidemic, according to Pritchett and Stillman, is a point in favor of the view that the micro-organism may be of significance in the disease in question. The upshot of all these somewhat comparable findings but conflicting views is that we must defer positive conclusions until more decisive evidence is brought forward.

LIMITING THE USEFULNESS OF THE PUBLIC HEALTH SERVICE

The substantial support given by Congress to the United States Public Health Service during the war encouraged all interested in public health to hope that at last this important branch of the federal government was to be supported in its efforts to meet the urgent demands for a national health service. This hope was all the more justified by the effective work accomplished by the Public Health Service in aiding the nation's war activities. Here, certainly, were numerous convincing demonstrations of what could actually be accomplished by well-planned public health activities carried on through the effective cooperation of federal, state and local health agencies.

In the face of these demonstrations, and despite the fact that the need for health conservation is greater than ever before, it is regrettable to note that Congress, in its plan to place all government departments on a

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[1] See, for example, Dever, F. J.; Boles, R. S., and Case, E. A.: Influenza at the U. S. Naval Hospital, League Island, Pa., J. A. M. A. **72**: 265 (Jan. 25) 1919. Stone, W. J., and Swift, G. W.: Influenza and Influenzal Pneumonia at Fort Riley, Kansas, from Sept. 15, to Nov. 1, 1918, ibid. **72**: 487 (Feb. 15) 1919. Kinsella, R. A.: The Bacteriology of Epidemic Influenza and Pneumonia, ibid. **72**: 717 (March 8) 1919.

[2] Okawara, I.; Tanaka, T.; Watanabe, Y.; Koyama, R., and Sato, T.: On the Cause of Influenza that Prevailed in 1918, Kitasato Arch. f. exper. Med. **2**: 335, 1918.

[3] Bloomfield, A., and Harrop, G. A., Jr.: Clinical Observations on Epidemic Influenza, Bull. Johns Hopkins Hosp. **30**: 1, 1919.

[4] Howard, S. E.: Bacteriological Findings in Epidemic Influenza, Bull. Johns Hopkins Hosp. **30**: 13, 1919.

[5] Pritchett, Ida W., and Stillman, E. G.: The Occurrence of Bacillus Influenzae in Throats and Saliva, J. Exper. M. **29**: 259, 1919.

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prewar basis, has deemed it expedient to discontinue or curtail a number of important activities recently developed by the Public Health Service. With the failure of Congress to pass the sundry civil bill, it is true that no final decision on the appropriation for the Public Health Service has yet been reached. It may be profitable, therefore, to examine some items of the program and budget prepared by the Public Health Service and compare this with the recommendations made by the Committee on Appropriations of the House of Representatives.

The reductions proposed by the committee relate chiefly to the items on field investigations of public health, interstate quarantine service, studies of rural sanitation and venereal diseases, and embrace both research and administrative work. For instance, the request for field investigations of public health—which embraces much of the research work of the service—was cut from $1,050,000 to $300,000. Under the appropriation requested, the bureau proposed to meet at least some of its responsibilities in the field of child hygiene ($150,000) by studying important problems relating to infant mortality, malnutrition and school hygiene, and by making demonstrations in this field in cooperation with state and local health authorities. The sum of $100,000 was asked for to improve the system of collecting morbidity reports by stationing a statistical clerk in each state and providing a central office for the tabulation and publication of this material. Half a million dollars was assigned to the very important field of industrial hygiene, a third of the sum for research on such matters as industrial air conditions, the employment of women in industry, industrial poisons in the dye industry, industrial fatigue and illumination, the rest for field investigations in cooperation with the Department of Labor, and state departments of health and of labor. Finally, the sum of $300,000 was to be utilized to study infectious diseases in man. When one considers the enormous havoc still wrought by diseases ordinarily considered preventable, as tuberculosis, pneumonia and malaria, this sum certainly constitutes a reasonable request. Yet in spite of the urgency of these investigations, the committee cut the estimate 70 per cent.

The requests made by the Public Health Service under the other heads suffered a similar reduction. For interstate quarantine, in place of $850,000 requested only $25,000 was recommended; for rural sanitation, in place of $500,000, only $50,000, and for venereal diseases, in place of $1,085,000, only $200,000 was recommended.

Among the items of the estimate that suffered severely was that for the control of biologic products, the appropriation for which was reduced from $100,000 to $35,000. The result of this will be that research in the field of serums and vaccines and similar products will be curtailed in a most serious manner. This particular subject is second to none in importance to the medical profession, and it will be most unfortunate if the activities of the services in this respect must be reduced.

It is not believed that the radical reductions recommended by the Committee on Appropriations reflect any antagonism on the part of Congress toward the Public Health Service. They seem rather to represent only the general policy of retrenchment which needs must be adopted in order to return the country to normal peace conditions. It is most unfortunate, however, that the attempt is apparently being made to effect horizontal reductions rather than to consider each activity in relation to the postwar needs of the country. From the latter standpoint the activities of the Public Health Service surely demand expansion and development rather than curtailment.

As a new sundry civil bill will soon be considered by the new Congress, the time is most opportune for physicians to express their interest in public health by urging favorable action by Congress on the appropriation requested for the Public Health Service. That this will be utilized to good advantage may be seen by studying the excellent program prepared by the Public Health Service, printed on page 1023 of this issue.

DEFECTIVE NUTRITION OF CHILDREN IN WAR-STRICKEN EUROPE

We have taken occasion at various times to point out some of the important practical consequences of the more recently acquired information regarding the food requirements of the human body in childhood. Contrary to the older assumptions, whereby the needs of the growing child for food fuel were expressed in proportionate fractions of the energy requirement of the adult, the modern nutrition studies, in this country in particular, have demonstrated the unexpectedly higher basal metabolism of childhood. If it is true, as Lusk[1] has maintained, that many cases of reported chronic malnutrition of infants are in reality due to persistent undernutrition, carried out in ignorance of the proper amount of food required by the child, a comparable ignorance applies to the dietary of later childhood years. It cannot be reiterated too often, until the knowledge has been firmly established where it is most needed, that the basal requirement of boys is, as Du Bois has shown, 25 per cent. greater than that of the adult. A growing, vigorous youth may consequently not be satisfied with a daily intake of 3,000 calories, which might be ample for the nutrition of his parent.

Throughout the period of stress in respect to available food during the war, even at a time when patriotism and self-preservation called for the utmost conservation of our food resources, the United States Food Administration has never overlooked these higher food requirements of the American youth. The avoidance of waste has never been translated into a stinting of the proportionately higher dietary allowance especially called for in childhood. The American food conservation propaganda has been wisely guided by experts in the science of nutrition rather than by mere political appointees. Consequently comparatively little physiologic detriment seems to have been experienced.

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[1] Lusk, Graham: The Fundamental Basis of Nutrition, 1914, p. 15.

How other countries have fared remains to be learned when the statistics and other forms of evidence become available through the renewed scientific intercourse after war conditions. An exceptionally interesting indication of what failure to realize the fundamentals of nutrition may entail during the years of childhood has been brought to light in a recently published account from one of the large orphanages of Berlin. Fuhge[2] has made accurate measurements of the food intake and metabolic balance of a group of children ranging from 6 to 14 years of age during the third year of the war, when food conditions were evidently becoming serious. The total calory intake as well as the proportion of protein ingested were evidently small, so that vigorous exercise sometimes entailed a notable loss of body tissue. The deficit in the diet was attributable in considerable degree to the diminution of fat allowed.

The detailed statistics of such investigations are of interest to the specialist alone. Of more widespread significance is the evidently retarded growth of the children thus examined. The failure to provide adequately for the nutrition of childhood in the Central Empires is similarly indicated in reports published from Prague during the past year.[3] The appearance of infantile scorbutus seems to have been one of the varied consequences falling in the wake of inappropriate nutrition. Unless marked improvement in the dietary possibilities, and particularly a more intelligent appreciation (even in the historic home of the science of nutrition) of the requirements of childhood are soon attained, the consequences to large numbers of developing individuals may be most unfortunate. As Mrs. Rose[4] has admirably expressed the situation: one year of good feeding at the beginning of life is more important than ten years after 40, and a baby's needs are not to be judged by an adult's inclinations. Feeding must be a matter of principle and not of impulse, and the reward will be partly in the present —much more in the future. We should profit by the lessons of European misfortune. Perhaps we can help by precepts as well as by contributions to avert further disaster among the sorely stricken inhabitants of the invaded and other afflicted lands.

Current Comment

IS A CHILD'S LIFE WORTH SIX DOLLARS?

How much does it cost to prevent deaths from diphtheria? The Ohio *Public Health Journal* for February gives the experience of the City of Salem, Ohio, for twenty years. During the ten years from 1890 to 1899 this town of about 10,000 inhabitants had 162 cases of diphtheria, with forty-eight deaths, or 30 per cent. In 1900 the city health authorities began furnishing free antitoxin for all cases of diphtheria. In the ten years from 1900 to 1909 there were 126 cases, with only one death — a case in which antitoxin was not administered until the third day. Had the percentage of fatalities been as high during the second decade as during the first, Salem would have had thirty-seven deaths from diphtheria in that time. The free antitoxin furnished for the ten years cost the city approximately $220, or an average of $6 per life. Any community desiring to know how much it would cost to save a child's life from diphtheria can ascertain this by multiplying the annual number of diphtheria cases by the cost of 5,000 units of antitoxin, and dividing the result by the number of deaths from diphtheria each year.

FALLACIES IN THE DISCUSSION OF SOCIAL INSURANCE

In the present discussion of social insurance in this country, as in England ten years ago, it seems impossible for either its advocates or its opponents to avoid extreme and partizan statements. Arguments on both sides are characterized by sweeping generalizations and unwarranted deductions, which too often are accepted by the reader because they are made by some well known authority. An illustration of this tendency is to be found in an editorial in the *New Republic,* March 22. After stating that "neither Republican nor Democratic leaders can afford to compromise" on the health insurance bill now before the New York legislature, the editorial continues: "Organized labor has unanimously placed health insurance first among its immediate legislative demands." This statement is incorrect. If the editor had said, "Organized labor *in New York State* has unanimously placed health insurance first among its immediate legislative demands," his statement would have been correct. The New York Federation of Labor has indorsed health insurance, as have a few other state federations. Enumerating the forces behind the measure, the *New Republic* says: "An impressive array of civic societies, far-sighted employers and physicians have come to the support of the bill." No "impressive array" of physicians has as yet supported any health insurance measure in any state. The editorial continues: "Congress adjourned without taking any action. The states must step into the breach — above all the pivotal state of New York." No measure providing for national health insurance has ever been presented to Congress, nor could Congress take any action on this subject. It is essentially, a matter that comes under state jurisdiction. New York may be a "pivotal state" in the political field, but it is no more pivotal from an industrial or economic standpoint than is Massachusetts, Pennsylvania, Ohio or Illinois. The editorial concludes: "The health insurance bill is the most important measure now before the legislators and the people of New York State. It should be passed without compromise, evasion or delay." It should if it is the best bill that can be devised; otherwise, it should not. If in the New York bill the interests of employees, employers, physicians and the state were properly safeguarded, then the statement of the *New Republic* might be accepted. But in the present state of knowledge on this question, any bill is an experiment. Probably before its passage, certainly before its administration is possible, a considerable amount of compromise will be necessary. Delay at present is not only unavoidable but desirable. No state has as yet passed any health insurance measure. The progress of the first state that does will be carefully watched. If delay affords an opportunity for careful consideration of the many phases of the bill, exhaustive discussion of the details, and a patient hearing to all interested parties, then the delay will be well worth while. Probably in no field of legislative action today is so great caution and deliberation advisable as in the field of social insurance. The editorial in the *New Republic* is a fair sample of the hasty and often misleading generalizations that are appearing on this subject. It is more than ever necessary that physicians keep cool heads and clear judgment, and refuse to allow their attention to be diverted from the essential principles involved in these proposed measures.

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[2] Fuhge, G.: Eine Stoffwechsel-Untersuchung an Kindern im Alter von 6-14 Jahren im dritten Kriegsjahre, Jahrbuch f. Kinderh. 88: 43, 1918.

[3] Epstein, A.: Ueber eine auffällige Häufung der Barlow'schen Krankheit in den Kriegsjahren 1917-1918, Jahrb. f. Kinderh. 88: 237, 1918.

[4] Rose, Mary Swartz: Feeding the Family, New York, 1916, p. 118.

THE VICTORY MEETING

From the reports received from the Local Committee on Arrangements, the attendance at the annual session of the American Medical Association in Atlantic City next June—the Victory Meeting—will be unusually large. It therefore behooves those who will attend the meeting to make hotel reservations early. This suggestion should not be understood to mean that hotel accommodations will *not* be available, but that hotel accommodations in the hotels on the beach front — the Boardwalk — may be difficult to secure. Attention is called to this matter solely for the purpose of urging those who particularly desire to be on the beach front to make their reservations early. Off the Boardwalk — up in the town — there are a number of excellent hotels. Two weeks ago, a list[1] of the hotel headquarters of the various sections was published in The Journal. An extended list of the Atlantic City hotels announcing rates and capacity is being prepared for the "Victory Meeting Number" of The Journal. In making reservations, the hotels should be addressed directly, or in case difficulties are encountered in obtaining satisfactory accommodations, the assistance of the chairman of the Local Hotel Committee, Dr. David B. Allman, or of the chairman of the Local Committee on Arrangements, Dr. Emery Marvel, may be requested by addressing them at Atlantic City.

LEARNING SPANISH

In another department is an answer to an inquiry relative to methods for learning Spanish. It is gratifying to note that the Spanish edition of The Journal has been instrumental in awakening greater interest in the Spanish language. Both for business and cultural reasons the Spanish tongue and literature should be better known in the United States. Those who take the pains to learn Spanish will find themselves amply repaid by the wealth of a literature which only now is beginning to be appreciated fully in this country. Unfortunately, many English translations of Spanish works which are available are not of the best. If the new era of friendship among nations is to develop—especially among the nations of the western hemisphere—the different peoples must become better acquainted. One way to accomplish this is by learning the foreign languages. We seem to be today no nearer than in the days of the Tower of Babel to that time when a universal language shall rise from the ruins of Latin, Volapük, Esperanto and Ido. It may not be amiss to say that those interested in Spanish will find an unusually easy method of improving their knowledge by comparing the translations in the Spanish edition of The Journal with the English original. In this way they may enrich their vocabulary and learn some of the finer distinctions in the grammatical construction of the two languages. One of the greatest of the Spanish monarchs is credited with saying that a man is worth as many men as languages he knows.

AN EXPLANATION OF DIGESTIVE LEUKOCYTOSIS

Digestive leukocytosis is an expression that has been employed for many years to indicate the fact that white blood corpuscles are found in the blood in unusually large numbers during the period of absorption of digestion products, particularly after a meal rich in proteins. This phenomenon has been appealed to in support of a now discarded hypothesis that the leukocytes play an important part in the transport of digestion products from the intestine to remote parts of the organism. The suggestion was made that the leukocytes are mobilized in large numbers in the intestinal wall during absorption to assist in the removal of the alimentary contributions into the circulation. Without presenting the arguments that led to the abandonment of the assumptions thus made, we may point out that the observed facts—the existence of a postprandial leukocytosis—remain valid. The maximum count occurs a few hours after the meal. According to investigations of Goodall, Gulland and Paton,[1] the blood change is chiefly due to a very constant increase in the number of lymphocytes, contributed to much less regularly by a relative increase in the polymorphonuclear cells. They further demonstrated that the source of the leukocytosis is entirely, or almost entirely, the bone marrow, in which they found an increased rate of production of white corpuscles during digestion. These long known facts in relation to "digestive leukocytosis" now seem capable of further elucidation. At the physiologic laboratory of McGill University, Montreal, Downs and Eddy[2] have shown that subcutaneous injection of secretin, the hormone that excites the flow of pancreatic juice, brings about a considerable increase in the number of red and white corpuscles in the blood stream by directly stimulating the production of new cells. If, as is now generally believed, secretin enters the circulation and is carried in the blood during digestion, there is no apparent reason why it should not thus normally be at least as potent a stimulus to blood cell formation as when experimentally introduced into the circulation. The similarity between the differential leukocyte counts during digestion and after the administration of secretin is, according to Downs and Eddy, additional evidence of secretin's being the cause of the increase in the number of corpuscles during digestion.

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[1] The Journal, March 22, 1919, p. 869.

[1] Goodall, Gulland and Paton: J. Physiol. 30: 1, 1904. Gulland and Paton: Ibid. 33: 20, 1905.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 28, the Medical Corps contained 19,655 officers, a decrease from the previous week of 588. The Medical Reserve Corps contained 1,319 officers. The total number of medical officers discharged since the beginning of the war is 13,705.

Casualties Among Medical Officers of the A. E. F. in France

From July 1, 1917, to March 13, 1919, there were 442 casualties among medical officers of the American Expeditionary Forces in France, divided as follows: died of wounds, 22; died of accident, 9; died of diseases, 101; killed in action, 46; lost at sea, 4; missing in action, 7; prisoners not wounded, 28; suicide, 3; wounded in action, degree undetermined, 47; wounded in action, severely, 93; wounded in action, slightly, 72.

Awards of Military Cross

Under authority delegated by King George the Fifth the field marshal commanding in chief has awarded the military cross for gallantry and devotion to duty in action to Sydney S. Schochet, Lieut., M. C., U. S. Army, Chicago, attached to the Highland Light Infantry.——Dr. Vincent M. Diodati, Philadelphia, who enlisted in the army the day the United States declared war and sailed with the first detachment of American medical officers sent over to be attached to the British forces, has been notified he will receive the coveted military cross from the hands of King George of England.

New Base Hospital Publications

Many of the base hospitals are now issuing special publications. The first number of the *Mess-Kit,* "written and published by the enlisted men of the U. S. Army Base Hospital, Camp Merritt, N. J., for the amusement and profit of patients from overseas, soldiers, sailors, marines and for all men and women in the service or out of it who have helped to 'make the world safe for democracy,'" has just been received. It is a monthly publication, well illustrated, instructive and interesting.——*Asyouwere* is the title of a publication issued weekly by U. S. Army General Hospital No. 24 at Pittsbugh, Lieut.-Col. E. D. Kramers, commanding officer. It contains much stimulating material, personal items, original cartoons, etc.

Medical Manuscripts Based on Military Facts to Be Submitted to Surgeon-General Before Publication

The Surgeon-General announces that the order requiring medical officers to submit to the Surgeon-General's Office for approval medical manuscripts based on military or official records or on military experience during the war is still in force as far as medical officers on active duty are concerned. Officers retired from active duty are requested to do likewise as a courtesy to the Surgeon-General and in aid of assembling material for the medical history of the war. Manuscripts are to be accompanied by a carbon copy. If approved, the original copy will be forwarded to the journal designated for publication, and the carbon will be filed in the records of the Medical History of the War.

Neosalvarsan Smuggled

According to *Oil Paint and Drug Reporter,* 1,900 ampules of neosalvarsan, said to have been smuggled into this country from Germany by an officer of the Medical Division of the United States Army, were seized by customs officials at Kansas City last week. The Army officer, whose name is withheld by the officials, is said to be in the East, and his arrest is expected momentarily. The value of the goods seized is estimated by the customs officials at $18,000. This is believed to be only a part of a larger amount smuggled into the United States. The duty, under normal conditions, would be about $6,000 on the quantity seized.

Federal officials say that the officer who brought the drug into this country is not only guilty of smuggling, but has violated the provision which prohibits the importation of goods obtained through "trading with the enemy," and has also violated the Pure Food and Drugs act when he failed to submit it for inspection under the provision of that act on his arrival here.

Regulations Governing Conversion of War Risk Insurance

The regulations governing the conversion to standard forms of life insurance policies of all war-time term insurance taken out by soldiers and sailors since the entrance of the United States into the war have been approved by Secretary Glass. After conversion this insurance will be known as government life insurance.

The forms of policies which may be had in exchange for the war-time term insurance are: ordinary life, twenty-payment life, thirty-payment life, twenty-year endowment, thirty-year endowment and endowment payable at the age of 62. The premium rates for these converted policies are lower than those charged by private insurance companies. The policies contain exceedingly liberal privileges, providing for cash and loan values, paid-up and extended insurance, and further providing that the insured will be paid for life a monthly income in the event that he becomes totally and permanently disabled. All of these policies are incontestable from date of issue and are free from restrictions as to residence, travel or occupation. The holders of the policies will be eligible to share in and receive dividends from gains and savings and the proceeds of the policies are exempt from all taxation. Premiums on the new forms of government insurance are payable monthly and may be paid at any time during the month. They may also be paid annually, semiannually or quarterly.

Awards of Distinguished-Service Cross

By direction of the President, under the provisions of the act of Congress approved July 9, 1918, the Distinguished-Service Cross was awarded by the commanding general, American Expeditionary Forces, for the extraordinary heroism in action in Europe, to the following-named officers and enlisted men of the American Expeditionary Forces:

LOUIS DIENER, Capt. Medical Corps, Sanitary Detachment, 112th Machine Gun Battalion, Baltimore. For extraordinary heroism in action in the Ravine de la Veux Michieux, France, Oct. 26-27, 1918. On being notified that an enemy shell had struck a dugout occupied by the brigade radio detachment, he ran to the aid of the buried men and worked tirelessly to rescue them. Despite the fact that numerous gas and high explosive shells were falling in the vicinity, he continued his efforts until he was certain that the three men remaining in the ruined dugout were dead.

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[2] Downs, A. W., and Eddy, N. B.: Secretin, IV, The Number of Red and White Corpuscles in the Circulating Blood During Digestion, Am. J. Physiol. 47: 399, 1918; 46: 209, 1918.

GEORGE E. McGINNIS, Capt. Ambulance Company 110, 103d Sanitary Train, Philadelphia. For extraordinary heroism in action at Fismette, France, Aug. 9-10, 1918. During the night of August 9, Captain McGinnis, with complete disregard of his personal safety, made a reconnaissance under fire and located a line of evacuation for ambulances from Fismette, and on the morning of August 10, under shell fire, he personally repaired the bridge between Fismes and Fismette, thereby making possible the evacuation of twenty-eight wounded men.

WILLIAM H. J. O'BRIEN, Lieut., M. C., U. S. Army, New York, on duty with the 76th U. S. Field Artillery, A. E. F. For extraordinary heroism in action near La Trinité Ferme, France, July 14-15, 1918. During the entire night of July 14-15 and throughout the following day, Lieutenant O'Brien was continually exposed to high explosive and gas shells in caring for the wounded, even after he had been painfully wounded by a fragment of a shell.

HENRY E. BUNCH, Capt., M. C., U. S. Army, 168th Infantry, Kennecott, Alaska. For extraordinary heroism in action near the Bois de Chatillon, France, Oct. 13-16, 1918. During the advance of his regiment in the Verdun sector he established aid stations at points as far advanced as possible and supervised them throughout the combat, working continuously, tirelessly, and fearlessly without food or rest. October 14, this officer went out in advance of the front line to reconnoiter a site for an aid station, and ambulance route. Seeing a wounded officer lying about 300 meters from the enemy's line, he went to his rescue and carried him through terrific machine gun and rifle fire to a shell hole, where he administered aid, in entire disregard of his own safety.

URBANE F. BASS, Lieut., M. C., U. S. Army, 372d Infantry, Fredericksburg, Va. For extraordinary heroism in action near Monthois, France, Oct. 1-6, 1918. During the attack on Monthois he administered first aid in the open under prolonged and intense shell fire until he was severely wounded and carried from the field.

WILLIAM H. J. O'BRIEN, Lieut. M. C., U. S. Army, 76th Field Artillery, New York City. For extraordinary heroism in action near La Trinité Ferme, France, July 14-15, 1918. During the entire night of July 14-15, and throughout the following day, Lieut. O'Brien was continually exposed to high explosives and gas shells in caring for the wounded, even after he had been painfully wounded by the fragment of a shell.

-**RALPH E. SWARTS**, Lieut., M. C., U. S. Army, 23d Infantry. For extraordinary heroism in action near St. Etienne á Arnes, France, Oct. 3-9, 1918. During the offensive operations of Oct. 3-9 Lieutenant Swarts worked unceasingly in the most advanced stations in the divisional sector dressing the wounded in the open under terrific machine gun and shell fire. He took cover only when all wounded had been dressed and evacuated.

Weekly Bulletin, A. E. F.

(*March 3, 1919*)

[NOTE.—We quote the following verbatim as it is evidently descriptive of cases of epidemic lethargic encephalitis occurring among the troops. It is evidence of the difficulty of men working in the field without access to current medical literature to keep abreast of medical knowledge.—ED.]

HAVE YOU SEEN ANY OF THESE CASES?

(CONTRIBUTION BY CHIEF OF MEDICAL SERVICE, BASE HOSPITAL NO. 214)

"A number of cases with unusual neurological findings have been observed at the hospital center at Savenay. They seem sufficiently important to make it desirable to ascertain whether similar cases have been met with in other hospitals in the A. E. F.

"These cases have followed rather mild infections (mumps, influenza, accessory nasal sinus infection, and possibly abortive cerebrospinal meningitis). Many of the clinical features resemble Parkinson's disease, namely masklike facies, slow, shuffling gait, with or without tremor of head and hands, moderate exaggeration of the deep deflexes, lack of timbre of voice tones, definite depression, moderate anxiety and apprehension. The clinical picture is somewhat similar to that seen after recovery from severe carbon-monoxide poisoning. It would seem most probable that these conditions are the result of degeneration of the lenticular nucleus, possibly of a toxic origin.

"The purpose of this note is to bring this condition to the attention of medical officers because it is thought that there are undoubtedly other such cases scattered through the various hospitals in the A. E. F. and it is very desirable to obtain accurate clinical observations in order that the disorder may be carefully studied and identified."

The senior consultant in neuropsychiatry would be glad to have case histories suggesting this order sent to him.

The clinical description may represent only accidental association of symptoms, but it is only by the analysis of such unexplained phenomena that syndromes are gradually crystallized into permanent clinical entities.

MONTHLY REVIEW

The month of February showed a reduction in the total cases reported of 199 as compared with the total for January. This reduction occurred in diphtheria, measles, meningitis, paratyphoid and typhoid fevers and smallpox. The greatest decrease was in typhoid fever, which showed a reduction from 333 cases in January to 171 in February. There were slight increases in dysentery and scarlet fever.

WEEKLY REVIEW

There has been a total reduction of forty-nine cases in the week. Typhoid and paratyphoid show sharp reduction to the lowest figure reported since November. Fewer new foci and organizations with new cases have been reported. There have been reductions in scarlet fever, in measles and in diphtheria. Meningitis has increased by seven cases. The incidence rate for new cases of venereal disease has risen, the rate per thousand per annum being 34.30 as compared with 34.29 last wek. Typhus fever is reported as having appeared among our troops in a small detachment at Cattaro, Dalmatia.

ANNUAL VENEREAL DISEASE RATE, PER 1,000 OF STRENGTH, FOR THE WEEK ENDING MARCH 3, 1919

Section	Rate	Section	Rate	Section	Rate
1	85	6	106	Paris	180
2	32	7	86	1st Army	12
3	10	Adv.	41	2d Army	18
4	49	Tours	104	3d Army	11
5	67	Int.	48	Divisions in S. O. S.	34
Annual rate per 1,000 for whole A. E. F.					34.30

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—Gaston, C. D. (L.)
Hollywood—Nye, G. E. (C.)
Luverne—Pollard, E. E. (L.)
Roanoke—Ford, C. E. (L.)
Talledega—Salter, C. L. (L.)

ARIZONA

Douglas—Adamson, E. W. (M.)

ARKANSAS

Batesville—Hinkle, C. G. (L.)
Hot Springs—Prichard, A. C. (L.)
McGehee—DeClark, W. H. (L.)
Monette—Ellis, I. W. (C.)
Tuckerman—Jamison, O. A. (L.)
Warren—Martin, R. (L.)

CALIFORNIA

Colma—Beattie, W. G. (C.)
Corning—McCann, F. E. (L.)
Glendale—Flint, J. L. (C.)
Hanford—Robbins, B. (L.)
La Manda Park—Collie, J. A. (C.)
Los Angeles—Cleeves, M. (L.)
  Cunnane, P. J. (L.)
  Dimon, R. B. (M.)
  Heustis, J. W. (C.)
  Kittle, W. F. (L.)
  Lacey, J. M. (L.)
  MacKenzie, W. W. (C.)
  May, H. C. (L.)
  McNair, W. R. (C.)
  Nelson, C. V. (L.)
  Tebbetts, H. B. (C.)
  Thorpe, A. C. (C.)
  Tower, O. I. (L.)
  Walters, C. M. C. (C.)
Marysville—Gray, E. E. (L.)
Montebello—Trewhella, J. S. (C.)
Novato—Anthony, L. A. (C.)
Orange—Hall, W. H. (L.)
  Marsden, S. A. (L.)
Oxnard—Tillman, F. J. (L)
Sacramento—Watt, F. W. (L.)
San Francisco—Adler, H. F. (L.)
  Green, L. D. (C.)
  Hemstreet, H. H. (C.)
  Seaforth, E. W. (L.)
  Stirewalt, H. W. (C.)
  Walker, C. A. (L.)
San Jose—Baker, M. D. (L.)
  Jordan, P. A. (C.)
San Mateo—Baker, W. C. (C.)
Santa Cruz—Phillips, A. L. (L.)
Santa Paula—Herbert, G. S. (C.)
Scotia—Cottrell, E. L. (C.)
Stockton—Conzelmann, F. J. (C.)
South Pasadena—Metcalf, C. F. (C.)
Susanville—Welsh, F. D. (C.)
Wagner—Graham, L. (C.)
Yermo—MacKenzie, D. W. (C.)

COLORADO

Canon City — Wilkinson, C. H. (C.)
Cripple Creek—Dunwody, J. A. (C.)
Denver—Hollison, H. J. (C.)
Golden—Kemble, E. W. (L.)

CONNECTICUT

Hartford—Rowley, J. C. (C.)
New Haven — Giamarino, H. J. (L.)
Waterbury — McDonald, A. F. (L.)

DISTRICT OF COLUMBIA

Washington — Marbury, W. B. (C.)
  Sullivan, R. Y. (M.)

FLORIDA

Freeport—Huggins, E. L. (L.)
Jacksonville—Aronovitz, S. (L.)
  Holden, G. R. (C.)
  Parramore, J. B. (C.)
  Waas, F. J. (C.)
Lakeland—Moon, W. B. (C.)
Larkins—Franklin, G. C. (L.)
Pensacola—Hargis, J. W. (M.)
Wauchula—Taylor, J. W. (L.)
West Palm Beach—Proctor, H. L. (L.)

GEORGIA

Athens—Holliday, J. C. (L.)
Atlanta—Folmor, J. Q. (L.)
  Young, W. W. (L.)
Camilla—Newson, E. T. (C.)
Ellijay—Cox, C. G. (L.)
Fort Valley—Brown, V. L. (C.)
Greensboro—Adams, E. G. (C.)
Macon—Adams, I. H. (C.)
  Diehl, J. E. (L.)
  Walker, C. H. (L.)
Maysville—Taylor, Q. (L.)
Moultrie—Hunter, C. W. (C.)
Norman Park — Whittendale, W. H. (L.)
Odessadale—Williams, V. G. (L.)
Savannah—Norton, W. A. (L.)
  Taylor, L. B. (M.)
Sycamore—Moore, J. T. (L.)
Ty Ty—Pittman, C. S. (L.)
Valdosta—Scruggs, C. G. (L.)

ILLINOIS

Aurora—Elliston, L. B. (L.)
Belleville—Gunn, J. C. (C.)
Bloomington—Shultz, C. E. (C.)
Cambridge—Conser, W. H. (L.)
Chicago—Berkowitz, J. S. (L.)
  Bryant, H. E. (L.)
  Harvey, J. R. (L.)
  Haynes, H. A. (L.)
  Joyce, P. V. (L.)
  MacNamara, J. R. (C.)
  Porter, W. A. (C.)
  Reams, A. L. (L.)
  Reinhardt, C. H. (L.)
  Rolnick, H. C. (L.)
  Smith, J. R. (L.)
  Zolla, N. (L.)
Cicero—Naikelis, S. (L.)
Cornell—Coen, C. M. (L.)
Downer's Grove—Puffer, M. L. (C.)
Elgin—Fell, E. W. (M.)
Fairbury—Brewer, C. S. (C.)
Mattoon—Kleckner, R. E. (C.)
Moline—Carlton, C. L. (C.)

Mulkeytown — Phillips, F. M. (L.)
Newark—Langum, I. G. (L.)
Oglesby—Cressman, R. G. (M.)
Springfield—Deal, J. F. (L.)
Hibbe, C. (L.)

INDIANA

Alfordsville—Winklepleck, A. M. (L.)
Bryant—Rupel, E. (L.)
Cross Plains—Ryan, C. D. (L.)
Farmersburg—Odell, I. H. (L.)
Fort Wayne—Morris, I. E. (C.)
Indiana Harbor — Levin, E. L. (L.)
Indianapolis—Bayer, C. F. (C.)
Hamer, H. G. (L.)
Hodges, F. (C.)
Shimp, H. A. (C.)
Woods, C. E. (L.)
Kramer—Little, E. O. (C.)
Muncie—Bowles, H. S. (L.)
Roanoke—Wilking, S. V. (M.)
Sullivan—Thompson, W. N. (C.)

IOWA

Carlisle—Carey, L. O. (L.)
Council Bluffs—Hennessy, M. C. (L.)
Des Moines—Kessell, J. E. (C.)
Lehman, E. W. (L.)
Lynch, R. J. (C.)
Throckmorton, R. F. (C.)
Fort Dodge—Beeh, E. F. (L.)
Fort Madison—Traverse, I. W. (C.)
Gilbert—Hoffman, W. L. (M.)
Neola—Se ard, G. (C.)
Ottumwa—Anthony, W. E. (C.)
Red Oak—Young, R. M. (M.)
Stockport—Graber, F. J. (L.)
Winthrop — Houshoulder, H. A. (L.)
Zwingle—Wheeler, E. R. (L.)

KANSAS

Brownell—Combs, J. W. (C.)
Coats—Campbell, J. R. (L.)
El Dorado—Boudreau, C. E. (C.)
Emporia—Hunt, W. D. (C.)
Florence—Wagar, L. S. (C.)
Hutchinson—Mayfield, C. (L.)
Kansas City—Coburn, C. E. (C.)
Fulton, J. A. (L.)
Parsons—Osburn, W. F. (C.)
Pretty Prairie—Taylor, E. C. (C.)
Salina—Neptune, J. W. (C.)
Topeka—Sams, L. V. (C.)
Wichita—Seydell, E. M. (C.)

KENTUCKY

Benton—Washburn, L. L. (C.)
Buckhorn—Abshear, Z. M. (L.)
Buffalo—Wyatt, I. L. (C.)
Elizabethtown—Alvey, W. F. (C.)
Franklin—Venable, C. L. (M.)
Lockport——Leslie, W. W. (C.)
Louisville—Barnes, C. W. (C.)
Haymond, R. G. E. (C.)
Hufnagel, C. J. (C.)
Morton, D. C. (M.)
Marcellus—Rose, S. J. (L.)
Perryville—Hopper, W. O. (C.)
Princeton—Jones, J. R. (L.)
Salem—Haylen, P. L. (L.)
Tompkinsville—Duncan, R. F. (C.)
Waverly Hill — Claypool, D. P. (C.)

LOUISIANA

Shreveport — Burchfield G. W. (L.)

MAINE

Portland—Mitchell, A., Jr. (C.)

MARYLAND

Baltimore—Bridgman, E. W. (C.)
Kieffer, G. S. M. (L.)
Leopold, E. J. (C.)
Reid, H. W. (L.)
Stickney, G. L. (C.)
Wentz, M. C. (L.)

MASSACHUSETTS

Boston—Flagg, H. H. (L.)
Leary, A. J. (L.)
McCauley, A. A. (C.)
McKenna, P. G. (C.)
Walker, W. W. (L.)
Haverhill—Capeles, T. F. (L.)
Lowell — O'Sullivan, F. A. M. (L.)
Newton—Macomber, D. (C.)

MICHIGAN

Detroit—Bell, J. N. (C.)
Condit, L. I. (C.)
Hyman, M. M. (L.)
Kalamazoo—Henwood, A. E. (C.)
Lansing—Murphy, C. H. (C.)
Laurium—Rhines, J. (L.)
Pontiac—Bachelder, F. S. (C.)

MINNESOTA

Campbell—Wray, W. E. (M.)
Dunnell—Anderson, N. P. (L.)
Frazee—Barton, E. R. (C.)
Grand Rapids—Hursh, M. M. (C.)
Madelia—Grimes, H. B. (C.)
Minneapolis—Gillmore, E. G. (L.)
Oetring, H. (L.)
Stoeckinger, J. A. (L.)
Tenbroeck, L. L. (M.)
Moorhead—Gosslee, G. L. (C.)
Redwood—McPheeters, H. O. (L.)
State Sanatorium—Brelsford, G. (L.)

MISSISSIPPI

Jackson—Neal, L. B. (C.)
Rembert, G. W. F. (C.)
Meridian—Bourdeaux, T. D. (C.)

MISSOURI

Cape Girardeau—Berry, J. W. (C.)
Cole Camp—Van Allen, J. P. (C.)
Columbia—Sneed, C. M. (C.)
Hannibal—Winn, R. M. (L.)
Kansas City—Castelaw, R. E. (C.)
Louisiana—Unsell, J. B. (C.)
Nelson—Shuck, L. I. (L.)
Pattonsburg—Hedges, F. (C.)
Portage des Sioux—Barnard, C. A. (L.)
Salisbury—Hawkins, G. W. (L.)
St. Joseph—Potter, C. A. (L.)
St. Louis—Bauman, C. M. (C.)
Benson, B. G. (C.)
Boehm, E. (L.)
Brashear, H. C. (L.)
Murphy, J. P. (L.)
Wilhelmi, O. J. (L.)
Warsaw—Savage, H. G. (C.)

MONTANA

Browning—Rosin, C. M. (L.)
Butte—Knight, A. C. (C.)
Tremblay, J. L. (C.)
Missoula—Tobinski, J. J. (L.)
Roundup—Pigot, C. T. (L.)

NEBRASKA

Clarks—Little, L. (C.)
Cozad—Sheets, C. H. (L.)
Eddyville—Kile, J. B. (L.)
Lincoln—Liston, O. E. (L.)
Newport—Dodd, C. Q. (L.)
Omaha—Allen, J. F. (C.)
Superior—Trowbridge, J. A. (C.)

NEVADA

Ely—Adams, A. F. (C.)

NEW HAMPSHIRE

Lancasfer—Cleasby, H. W. (C.)

NEW JERSEY

Camden—Marcy, F. W. (C.)
Deerfield Street—Cooper, H. L. (C.)
Webb, H. P. (L.)
Newark—Mullin, R. J. (C.)
Preston, P. B. (L.)
Passaic—Kroll, A., Jr. (L.)
Trenton—Taylor, W. A. (L.)
Union Hill—Justin, A. W. (L.)
West Hoboken—Klaus, H. F., Jr. (L.)

NEW MEXICO

Carrizozo—Lucas, R. T. (C.)
Las Cruces — Vandevere, W. E. (L.)

NEW YORK

Bath—Hill, R. C. (C.)
Brooklyn—Blinder, J. (L.)
Fricke, L. T. (L.)
Holly, I. M. (C.)
Jessup, E. C. (C.)
Rivkin, M. (L.)
Woolsey, W. C. (M.)
Buffalo—Grotz, J. G. (L.)
Stowe, J. G. (C.)
Flushing—Swan, D. J. (L.)
Forest Hills—Keyes, E. L., Jr. (Col.)
Hicksville—Freundlich, T. (L.)
Ithaca—Lee, W. F. (L.)
Malone—Allison, B. R. (C.)
New York—Barr, D. P. (L.)
Coulter, C. B. (C.)
Cunningham, W. F. (C.)
Dillon, C. J. (C.)
Elser, W. J. (L. C.)
Engelson, J. E. (C.)
Grace, R. V. (C.)
Herman, H. (L.)
Keil, F. C. (L.)
Kennedy, R. H. (L.)
Kraner, J. (L.)
McCreery, J. A. (M.)
Neuhof, H. (C.)
Newman, D. (L.)
Parsons, W. B., Jr. (C.)
Patton, G. F. (L.)
Pellini, E. J. (L.)
New York—Peters, J. P., Jr. (C.)
Rosenthal, B. (L.)
Seff, I. (L.)
Shattuck, H. F. (L.)
St. John, F. B. (M.)
Stevens, A. R. (M.)
Tull, E. E. (M.)
Tyson, C. J. (C.)
Vermilye, H. N. (C.)
Weems, B. F., Jr. (C.)
Whitman, A. (C.)
F. (C.)
G. (L.)
G. (L.)
. J. (L.)
Kennedy, E. W. (C.)
Standish—O'Keefe, E. B. (L.)
Syracuse—Conan, N. J. (L.)
Troy—Hull, A. J. (C.)

NORTH CAROLINA

Waxhaw—Guin, L. E. (L.)

NORTH DAKOTA

Grand Forks—Peake, A. (L.)
Hazen—Brandes, H. A. (L.)

OHIO

Bellefontaine — Kaylor, F. B. (L.)
Bryan—Solier, F. E. (C.)
Bucyrus—Carlisle, W. G. (L.)
Cincinnati—Amidon, C. S. (L.)
Van Voast, R. A. (C.)
Wolf, S. (L.)
Cleveland — Chamberlain, W. S. (C.)
Cutler, F. E. (C.)
Davidson, P. F. (C.)
Garrett, E. W. (L.)
O'Brien, M. A. (L.)
Columbus — Junkermann, E. B. (C.)
Williams, T. R. (L.)
Greenville—Sarver, A. F. (L.)
Hudson—Miller, G. A. (L.)
Jackson—Caldwell, R. W. (L.)
Kelleys Island—Manning, G. W. (L.)
Lima—Vorbau, W. H. (L.)
Medina—Strong, R. G. (L.)
Piqua—Spencer, R. D. (L.)
Salem—McGeorge, J. M. (L.)
Springfield—Hamma, C. B. (C.)
Swanton—Brailey, H. E. (L.)
Toledo—Quick, R. H. (C.)
Weston—Aurand, G. C. (L.)
Youngstown—Dixon, F. W. (L.)
Hancuff, A. P. (L.)
Ryall, W. W. (C.)
Zanesville—Higgins, C. H. (C.)

OKLAHOMA

Bristow—King, E. W. (L.)
Byron—Harris, G. G. (L.)
Cyril—Coker, G. B. (L.)
Kusa—Thompson, W. A. (L.)
Muskogee—Fryer, S. J. (C.)
Newkirk—Hazen, A. L. (C.)
Okmulgee—Randel, H. O. (L.)
Weatherford—Gordon, J. M. (C.)

OREGON

Crane—Vincent, L. H. (L.)
Dallas—Tharp, H. Z. (L.)
Haines—Biswell, R. (C.)
Portland—Abele, J. G. (C.)
Moran, K. P. (L.)
Seaside—Hagmeier, O. C. (C.)

PENNSYLVANIA

Bellevue—Shepard, W. B. (L.)
Bloomsburg — McHenry, D. B. (L.)
Conyngham—Koons, R. O. (L.)
Elizabeth—Rowland, I. E. (L.)
Hazleton—Dyson, J. R. (M.)
Kane—Cox, M. W. (L.)
Lancaster—Kinzer, H. C. (L.)
Linglestown—Shenk, F. L. (C.)
Marion Center—Stewart, J. M. (C.)
Monaca—Mackall, M. M. (L.)
Norristown—Peters, T. (C.)
Osterburg—Cook, T. W., Jr. (L.)
Philadelphia—Becker, C. (C.)
Berg, A. P. (L.)
Borow, B. (L.)
Clapp, G. H. (C.)
Keilty, R. A. (M.)
Lukens, R. M. (L.)
Righter, L. L. (L.)
Roepke, H. F. (L.)
Ryan, W. C. (C.)
Silverman, A. (L.)
Walther, R. A. (L.)
Wray, W. S. (C.)
Zimlick, A. J. (C.)
Pittsburgh—Hesser, A. J. (C.)
Morris, A. F. B. (C.)
Wakefield, C. W. (L.)
Reading—Frankhauser, A. F. (L.)
Scranton—Falkowsky, C., Jr. (C.)
Shenandoah—Reddy, W. J. (L.)
Scanlan, W. J. (C.)
Terre Hill—Royer, J. W. (C.)
Warren—Stewart, P. B. (C.)
Woodlawn—Mellon, G. W. (L.)

RHODE ISLAND

Bristol—DeWolf, H. (L.)
Providence—Bannon, J. W. (L.)
Copenhaver, N. H. (L.)
Streker, W. S. (L.)

SOUTH CAROLINA

Abbeville—Evans, J. E. (C.)
Anderson—Dean, S. C. (L.)
Brunson—Mole, J. W., Jr. (L.)
Cowpens—Scott, H. T. (L.)
Glenn Springs—Smith, D. H. (L.)
Greenwood—Blake, C. H. (L.)
Marion—Howell, C. S. (L.)
Saluda—Boozer, H. T. (L.)

SOUTH DAKOTA

Parker—Newby, H. D. (L.)
Spearfish—Hare, C. (L.)

TENNESSEE

Benton—McClary, S. B. (L.)
Chattanooga—Johnson, J. W. (C.)
Eastlake—Stem, L. T. (L.)
Memphis—Buck, K. M. (L.)
Smythe, F. W. (L.)
Nashville—Blaydes, J. E. (L.)
Caldwell, J. W. (C.)
Cowan, S. C. (L.)
Griffin, C. G. (L.)
Manier, J. O. (L.)
McClure, J. H. (C.)
Tharp, M. (L.)
Trenton—McRee, W. C. (C.)
Union City—Park, I. O. (L.)

TEXAS

Abilene—Hollis, L. W., Jr. (L.)
Blooming Grove—Wilkinson, J. A. (L.)
Bonham—McDaniel, H. A. (C.)
Dallas—Irvine, E. J. (L.)
DeKalb—Crew, C. S. (L.)
Fort Worth—Bond, T. B. (L.)
Houston—Dawes, R. (C.)
Milford—Rogers, H. E. (L.)
Post—Williams, D. C. (C.)
Rosstown—Johnston, W. M. (L.)
San Antonio—Russ, W. B. (M.)
Saron—Conley, J. W. (C.)
Strawn—Cromeans, R. E. (L.)
Waco—Aynesworth, H. T. (C.)
Waxahachie—Sweatt, O. P. (L.)
Wichita Falls—Glover, M. H. (L.)
Wortham—McLendon, T. P. (L.)

UTAH

Ogden—Clark, F. G. (C.)
Rich, L. F. (C.)

VERMONT

Burlington—Gannon, C. L. (L.)
Johnsburg—Burke, R. H. (L.)
Orleans—Wells, R. M. (L.)

VIRGINIA

Covesville—Nelson, F. P. (L.)
Farmville—Hardy, T. G. (L.)
North Emporia—Mahood, H. B. (C.)
Rustburg—Watkins, O. L. (L.)
Swoope—Hartman, W. F. (C.)

WASHINGTON

Anacortes—Brooks, S. G. (C.)
Bremerton—Smythe, E. L. (L.)
Montesano—Fitz, J. H. (C.)
Moxee City—Cocklin, W. K. (L.)
Olympia—Murphy, G. E. (C.)
Pomeroy—Rhodes, E. J. (L.)
Seattle—Davidson, C. F. (M.)
Joiner, W. E. (C.)
Palmer, W. G. (C.)
Poska, A. (L.)
Trueblood, D. V. (C.)
Weichbrodt, I. A. (C.)
Sunnyside—Fordyce, W. E. (L.)
Tacoma—Burke, G. (L.)
Yocom, J. R. (C.)

WEST VIRGINIA

Brown—Chapman, J. H. (C.)
Charleston—Shirkey, W. F. (L.)
Clendenin—Caldwell, M. E. (C.)
Mason—Sayre, R. F. (L.)
Parkersburg—Richardson, W. B. (L.)
Ridgeley—Cowherd, J. K. (C.)
Wheeling—Clovis, C. H. (L.)

WISCONSIN

Ladysmith — Stephenson, W. L. (C.)
LaFarge—Haggerty, E. E. (L.)
Madison—Drane, R. (C.)

Mellen—Lockhart, C. W. (L.)
Milton Junction—Coon, W. W. (L.)
Milwaukee—Bach, R. J. (L.)
Podlasky, H. B. (C.)
Princeton—Fortner, W. H. (L.)
Racine—Conley, J. G. (L.)
Superior — Broghammer, F. J. (L.)
Viroqua—Sathe, M. R. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Berkeley—Stearns, A. W.
Holtville—Mosher, W. F.
Lodi—Bolinger, H. J.
Los Angeles—Avery, L. G.
Boller, P.
Ferbert, J. C.
Josephs, L.
San Francisco—Athay, R. M.
Castelhun, P.
Langecker, H. L.
Ventura—Homer, R. W.

DELAWARE

Centerville—Crossan, J. W.

GEORGIA

Atlanta—Donaldson, H. R.

ILLINOIS

Chicago—Carroll, C. H.
Knapp, J. L.
Probstein, J.
Rowley, W. N.
Lake Forest—Orcutt, A. H.

IOWA

Iowa City—Myers, L. L.
Lecompte—Freeman, O. L.

KANSAS

Rosedale—Clasen, A. C.

MASSACHUSETTS

Boston—Brine, E. L.
Hamilton, A. J. A., Jr.
New Bedford—Lipsitt, C. S.
Pittsfield—Cook, P. C.

MONTANA

Rapelje—Robb, H. F.

NEBRASKA

David City—Beede, C. E.

NEW JERSEY

Bayonne—Klein, E.
Trenton—Williams, G. W.

NEW YORK

Brooklyn—Gibson, G. M.
Langs, L.
Nexsen, H.
Dunkirk—Irving, G. O. R.
New York—Anthony, D. H.
Bickley, E. B.
Cooney, J. D.
Harper, W. H.
MacKenzie, G. M.
Schulhofer, J.
Steinhauser, C.

NORTH CAROLINA

Scotland Neck—Smith, C. T.

OHIO

Columbus—Williams, F. O.
Dayton—Roop, W. O.
Saint Marys—Shuffleton, F. A.

PENNSYLVANIA

Philadelphia—Cox, R. M.
Manasses, J. L.
Rosen, M.
Siggins, J. C.
Pittsburgh—Sheppard, T. T.

RHODE ISLAND

Providence—Gilpatrick, L. S.
Hussey, F. V.

SOUTH CAROLINA

Timmonsville—Smith, H. P.

TENNESSEE

Nashville—Simons, I.

WASHINGTON

Seattle—Thomson, C. H.
Tacoma—Henry, J. E.

WISCONSIN

Menomonie—Nedry, G. C.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Gordon, Ga., base hospital, from Camp Sheridan, Major J. E. DEDMAN, Birmingham.

To report to the commanding general, Southern Department, from Sacramento, Calif., Major J. R. OSWALT, Union Springs.

Arkansas

To Fort Sill, Okla., base hospital, from Camp Pike, Lieut. S. F. HOGE.

The following order has been revoked: *To report to the commanding general,* Southeastern Department, from Camp Joseph E. Johnston, Capt. E. E. POYNOR, Green Forest.

California

To Camp Kearney, Calif., base hospital, from Camp Fremont, Capts. M. H. ROSS, Los Angeles; E. N. REED, Santa Monica; Lieuts. C. D. SWEET, Fresno; N. M. SALTER, Williams.

To Camp Lee, Va., from Seven Pines, Capt. F. M. TROUT, Los Angeles.

To Camp Pike, Ark., from Camp Logan, Lieut. L. C. SCULLY, San Jose.

To Camp Sherman, Ohio, base hospital, from Camp McClellan, Capt. W. P. MILLIKEN, Oakland.

To Camp Travis, Texas, base hospital, from Camp Dix, Capt. W. W. WASHBURN, San Francisco.

To Camp Travis, Texas, base hospital, from Camp Kearney, Capts. C. J. TEASS, H. O. VON DER LEITH, San Francisco.

To report to the commanding general, Western Department, from Vancouver Barracks, Major G. NEWLOVE, Calerico.

Colorado

To Fort Bliss, Texas, base hospital, from Fort Des Moines, Lieut. S. S. GOLDHAMMER, Denver.

District of Columbia

To Fort Sheridan, Ill., from Long Beach, Lieut. C. B. CONKLIN, Washington.

To Washington, D. C., Surgeon-General's Office, Col. W. H. WILMER, Washington.

The following orders have been revoked: *To Canal Zone,* from Army Medical School, Col. E. B. VEDDER. *To Fort McHenry, Md.,* from Camp McClellan, Lieut. H. A. BAUGHN, Washington.

Florida

The following order has been revoked: *To report to the commanding general,* Southeastern Department, from Camp Joseph E. Johnston, Capt. J. M. IRWIN, Crystal River.

Georgia

To Tullytown, Pa., from Camp Greene, Capt. W. W. CORNOG, Lavonia.

Hawaii

To Newport News, Va., from Camp Hancock, Major J. B. LUDY, Honolulu.

Illinois

To Camp Jackson, S. C., to examine the command for nervous and mental diseases, from Camp Sheridan, Capt. J. K. POLLOCK, Elgin.

To Camp Lewis, Wash., base hospital, from Camp McClellan, Capt. W. S. CONN, Naperville.

To Camp Upton, N. Y., base hospital, from Camp Hancock, Capt. W. J. RIDEOUT, Freeport.

To Camp Wadsworth, S. C., from Camp McClellan, Lieut. R. M. CARPENTER, St. Charles.

To Camp Zachary Taylor, Ky., base hospital, from Camp Sheridan, Lieut. M. LANDO, Chicago.

To Cape May, N. J., from Camp Beauregard, Capt. E. LaMOTHE, Chicago.

To Chicago, Ill., from Fort Benjamin Harrison, Capt. P. P. HASLITT, Marshall.

To Denver, Colo., from Markleton, Lieut. R. G. PESCHMAN, Chicago.

To East View, N. Y., from Camp Devens, Lieut. G. M. LANDAU, Chicago.

To Frederickstown, N. J., from Fort Sheridan, Lieut. J. P. O'NEIL, Highland Park.

To Jefferson Barracks, Mo., from Camp Hancock, Lieut. N. C. STAM, Chicago.

To Jefferson Barracks, Mo., from Camp Meade,, Lieut. L. M. HAYES, Alton.

To Oteen, N. C., from Camp Beauregard, Major T. P. WARD, Mount Vernon.

To report to the commanding general, Central Department, from Camp Grant, Capt. G. T. JORDAN, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Colonia, Lieut. D. C. SIGWORTH, Chicago.

To St. Louis, Mo., from Fort Des Moines, Lieut. T. J. ECHERER, Chicago; from Newport News, Capt. D. E. EGAN, St. Charles.

To San Francisco, Calif., Letterman General Hospital, from Fort Oglethorpe, Capt. W. H. GALLAND, Chicago.

To Walter Reed General Hospital, D. C., from Fort Snelling, Lieut. H. B. THOMAS, Chicago.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major M. L. GOODKIND, Chicago.

Indiana

To Fort Benjamin Harrison, from Camp Hancock, Lieut. E. F. SMALL, Decker.

To Fort Sheridan, Ill., from Camp A. A. Humphreys, Major O. A. NEWHOUSE, Montezuma.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. W. H. MIKESCH, Hammond.

To report to the commanding general, Central Department, from Camp Lewis, Capt. G. W. WILSON, Mount Vernon.

To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Capt. E. B. CHENOWETH, Nineveh; from Camp Fremont, Lieut. C. E. PETERS, National Military Home.

To St. Louis, Mo., from Camp Dix, Major G. W. NEWELL, Peru.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. B. M. HUTCHINSON, Mishawaka.

Iowa

To Fort Sheridan, Ill., from Fort Des Moines, Capt. F. R. HOLBROOK, Des Moines.

Kentucky

To Hampton, Va., Langley Field, from Richmond, Lieut. C. P. HARROD, South Park.

Maryland

The following order has been revoked: *To Camp Grant, Ill.,* base hospital, Capt. W. A. SMITH, Webster Groves.

Massachusetts

To Army Medical School for instruction, from Camp Dix, Capt. H. C. MARBLE, Boston.

To Biltmore, N. C., from Camp Dix, Major J. W. LANE, Boston.

To Boston, Mass., from Camp Devens, Lieut. C. W. PEABODY, Boston; from Camp Dix, Capt. G. CLYMER, Boston; from Camp Upton, Capt. C. T. PORTER, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. ROBERTS, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. FOX, Taunton.

To Hoboken, N. J., from Eastview, Lieut. G. L. CHAFFIN, Boston.

To Houston, Texas, Ellington Field, from Everman, Lieut. L. J. ULLIAN, Boston.

To Newport News, Va., from New Haven, Lieut. H. ZIMMERMAN, Springfield.

To Newport News, Va., from Camp Upton, Capt. R. A. GREENE, Palmer.

To Otisville, N. Y., from Camp Custer, Lieut. J. J. COSGROVE, Westfield; from Markleton, Lieut. H. M. STEWART, Pittsfield.

To report to the commanding general, Northeastern Department, from Boston, Major B. H. METCALF, Winthrop.

Michigan

To Denver, Colo., from Markleton, Capt. A. M. WEHENKEL, Detroit.

To Detroit, Mich., from Camp Custer, Capt. E. O. SAGE, Detroit.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from New Haven, Lieut. L. P. SCHROEDER, Calumet.

To Fort Logan H. Roots, Ark., from Camp Beauregard, Lieut. R. G. KARSHNER, Big Rapids.

To Mineola, N. Y., from Garden City, Lieut. W. A. DEFNET, Detroit.

To Newport News, Va., from Plattsburg Barracks, Major J. T. SAMPLE, Saginaw.

To report to the commanding general, Western Department, from Camp Dix, Lieut. S. M. WELLS, Jr., Grand Rapids.

Minnesota

To Camp Benning, Ga., as camp surgeon, from Camp Meade, Lieut.-Col. J. S. WHITE, St. Paul.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Lieut.-Col. L. G. ROWNTREE, Minneapolis.

Mississippi

To Seven Pines, Va., from Camp Wadsworth, Lieut. C. H. HARRISON, Philadelphia.

Missouri

To Camp McClellan, Ala., from Jackson Barracks, Capt. C. A. HOBERECHT, St. Louis.

To Houston, Texas, Ellington Field, from Camp John Wise, Lieut. P. C. DAVIS, Madison.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C., for instruction*, and on completion *to his proper station*, from Camp Zachary Taylor, Lieut. C. C. KLEINSCHMIDT, St. Louis.

To Washington, D. C., Surgeon-General's Office, from Camp Travis, Capt. D. E. SCHMALHORST, St. Louis; from Hoboken, Col. N. ALLISON, St. Louis.

Nebraska

To Camp Grant, Ill., base hospital, from Camp Dix, Lieut. O. E. COLEMAN, Ainsworth.

New Hampshire

To Camp Devens, Mass., base hospital, from Fort McPherson, Capt. R. S. PERKINS, Exeter.

New Jersey

To Camp Meade, Md., base hospital, from Camp McClellan, Lieut. W. G. SHEMELEY, Jr., Camden.

To Colonia, N. J., from Camp Devens, Lieut. D. A. CURTIS, Paterson.

To Denver, Colo., from Camp Dix, Capt. T. W. HARVEY, Jr. Orange.

To Fox Hill, Staten Island, N. Y., from Camp Logan, Lieut. L. D. WHITNEY, Belleville.

The following order has been revoked: *To South Baltimore, Md.*, from Lawrenceville, N. J., Capt. C. BROWNE, Princeton.

New York

To Camp Dix, N. J., from Panama Canal, Major L. LOUGHRAN, New York. As orthopedic surgeon, from Army Medical School, Lieut. J. W. SMITH, Brooklyn.

To Camp Sherman. Ohio, base hospital, from Camp Wadsworth, Lieut. J. C. O'NEILL, New York.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Major N. P. BREED, Douglaston; from Lakewood, Capt. T. D. BUCHANAN, New York.

To Camp Upton, N. Y., base hospital, from Hoboken, Capt. H. R. STONE, New York.

To Camp Wadsworth, S. C., base hospital, from Camp Hancock, Capt. J. C. DEVRIES, Brooklyn.

To Camp Zachary Taylor, Ky., base hospital, from Camp Sherman, Lieut. F. N. POTTS, Buffalo.

To Camp Wadsworth, S. C., from Camp Upton, Lieut.-Col. L. H. POUST.

To Colonia, N. J., from Camp Jackson, Major F. T. ROBESON, New York.

To Eastview, N. Y., from Camp Upton; Major L. B. MEYER, New York.

To Fort McPherson, Ga., from San Juan, Major E. W. LEE, New York.

To Fort Sheridan, Ill., from Williamsbridge, Major D. F. MAGUIRE.

To Fox Hills, N. Y., from Camp McClellan, Lieut. F. W. HOLCOMB, New York.

To Hoboken, N. J., from Army Medical-School, Capt. D. C. PATERSON, Yonkers; from Camp Lee, Lieut. I. GREENBERG, New York; from Colonia, Lieut. W. W. LASHER, New York.

To Jefferson Barracks, Mo., from Camp Lee, Lieut. N. W. GETMAN, Oneonta.

To Newport News, Va., from Camp Meade, Capt. T. I. TOWNSEND, Binghamton.

To Northeastern Department, from Camp McClellan, Capt. H. E. MEEKER, New York.

To Pittsburgh, Pa., from Camp Dix, Lieut. H. J. McDONALD, Buffalo.

To Rockefeller Institute for instruction, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Biltmore, Capt. H. L. WENNER, Jr., New York; from Camp Lee, Lieut. C. COLDMAN, Brooklyn.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to Army Medical School*, for instruction, from Camp Hancock, Lieut. C. A. LEE, Brooklyn. On completion *to his proper station*, from Camp Lee, Lieut. C. W. SYMONDS, New York. On completion *to Hoboken, N. J.*, from Camp Meade, Major A. H. PARSONS, Great Neck.

To Washington, D. C., Surgeon-General's Office, from New York, Lieut.-Col. W. J. ELSER, New York.

The following order has been revoked: *To report to the commanding general*, Northeastern Department, from Camp McClellan, Capt. H. E. MEEKER, New York.

Ohio

To Detroit, Mich., from Walter Reed General Hospital, Capt. C. L. STOREY, Oberlin.

To Fort Sheridan, Ill., from Walter Reed General Hospital,, Capt. C. L. STOREY, Oberlin.

To Hoboken, N. J., from Camp Dix, Lieut. B. HIBBARD, Lima.

To Jefferson Barracks, Mo., from Camp Hancock, Lieut. H. BENUS, Cincinnati; from Camp Pike, Lieut. R. L. KUNKLE, Piqua.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. O. B. BIERN, Cincinnati.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Camp Sherman, Capt. C. D. HAUSER, Youngstown.

To St. Louis, Mo., from Camp McClellan, Lieut. C. H. CHASE, Cleveland; from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Akron, Ohio, from Indianapolis, Lieut. W. M. SYKES, Ramona.

To Buffalo, N. Y., from Fort Caswell, Lieut. H. C. BRADLEY, Oklahoma.

To Camp Pike, Ark., from Camp Hancock, Lieut. J. L. MINER, Beggs.

To Hoboken, N. J., from Camp Dix, Lieut. M. V. STANLEY, Tulsa.

Pennsylvania

To Army Medical School for instruction, from Camp Dix, Lieut. E. B. SLOTERBECK, Monessen.

To Biltmore, N. C., from Camp Hancock, Capt. R. G. TORREY, Philadelphia.

To Camp Bragg, N. C., from Camp Logan, Lieut. F. W. GUSTITES, Wilkes-Barre.

To Camp Dodge, Iowa, base hospital, from Camp Dix, Major E. W. MEREDITH, Pittsburgh.

To Camp Gordon, Ga., base hospital, from Camp Hancock, Capt. G. P. ARD, Woodward.

To Fort McHenry, M.D., from San Francisco, Capt. C. N. HAINES, Sayre.

To Fort McPherson, Ga., from Camp Jackson, Capt. A. E. BARTON, Lewisburg.

To Fort Ontario, N. Y., from Danville, Lieuts. H. A. WICK, New Bethlehem; J. A. MERIWETHER, Philadelphia.

To Fox Hills, Staten Island, New York, from Camp Dix, Lieut.-Col. J. H. JOPSON, Philadelphia; from Camp Meade, Lieut. H. L. BATES, Philadelphia.

To Hoboken, N. J., from Fort McHenry, Capt. R. E. STIFEL, Pittsburgh.

To Lakewood, N. J., from Camp Dix, Capt. J. H. GALBRAITH, Altoona.

To Newport News, Va., from Camp Jackson, Capt. A. D. FINLAYSON, Warren.

To St. Louis, Mo., from Camp Dix, Lieut. J. R. BROBST, Bloomsburg.

Tennessee

To Army Medical School for instruction, from Camp Dix, Lieut. E. L. ANDERSON, Memphis.

To Camp Kearney, Calif., base hospital, from Camp Fremont, Capt. W. A. CASHION, Fayetteville.

To Camp Lee, Va., as tuberculosis examiner, from Montgomery, Lieut. E. C. SEALE, Nashville.

To Camp Pike, Ark., base hospital, from Camp Sheridan, Major W. H. BALDWIN, Memphis.

Texas

To Arcadia. Fla., Carlstrom Field, from Dallas, Lieut. S. G. ODOM.

To Camp Bowie, Texas, base hospital, from Fort McPherson, Lieut. W. H. COOLEY, Sarita.

To Everman, Texas, Barron Field, from Camp Dix, Major A. F. BEVERLY, Austin.

To Fort McPherson, Ga., from Newport News, Major J. H. GAMBRELL, Dallas.

To Fort Sam Houston, Texas, base hospital, from Camp Dix, Capt. J. H. SHELTON, Kingsville.

To Fort Sam Houston, Texas, base hospital, from Camp Dix, Capt. F. E. HUDSON, Anson; from Camp Sheridan, Capt. J. C. MICHAEL, Houston.

To Fort Sheridan, Ill., from Chicago, Lieut. H. O. JONES, Denison.

To Hoboken, N. J., from Camp Dix, Major W. H. HARGIS, San Antonio; from Camp Logan, Lieut.-Col. J. M. WILLIS.

To Houston, Texas, Ellington Field, from Camp John Wise, Capt. W. O. STEPHENSON, Dallas; from Dallas, Lieut. H. M. ANDREW; from Middletown, Capt. O. P. GOODWIN, Lamasco.

To Newport News, Va., from Pig Point, Lieut. R. L. DINWIDDIE, San Antonio.

To report to the commanding general, Southern Department, from Camp Logan, Capt. S. A. McCONNELL, Franklin.

Utah

To St. Louis, Mo., from Denver, Lieut. L. S. MERRILL, Brigham.

Virginia

To Camp Dix, N. J., as sanitary inspector, from Camp Sheridan, Major T. R. MARSHALL, Ware Neck.

To Camp Gordon, Ga., base hospital, from Camp Hancock, Major W. J. OLDS, Front Royal.

To Carlisle, Pa., from Camp Abraham Eustis. Major P. C. RILEY, Markham.

To Fort Ontario, N. Y., from Danville, Lieut. G. G. HANKINS, Phoebus.

The following order has been revoked: *To report to the commanding general*, Northeastern Department, from Camp McClellan, Lieut. S. D. WILLIAMS, Norfolk.

West Virginia

To Baltimore, Md., from Camp Hancock, Lieut. W. S. CRAWFORD, Follansbee.

Wisconsin

To Camp John Wise, Texas, from San Antonio, Capt. J. H. FOWLER, Lancaster.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Camp Lewis, Capt. H. M. COLEMAN, Barron.

To Fort Des Moines, Iowa, from Camp Pike, Lieut. C. B. HAKE, Milwaukee.

To Fort Ontario, N. Y., from Danville, Capt. W. T. KRADWELL, Wautosa.

To Fort Snelling, Minn., from Camp Hancock, Lieut. J. H. CARROLL, Milwaukee.

To Fort Snelling, Minn., from Camp Hancock, Lieut. J. H. CARROLL, Milwaukee.

To Lake Charles, La., Gerstner Field, from Montgomery, Capt. H. S. STEENBERG, Milwaukee.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Colonia, Lieut. H. E. BUNDY, Milwaukee.

To St. Louis, Mo., from Fort Des Moines, Lieut. A. YAFFE, Milwaukee.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. T. CLARK (Reserve), proceed to Richmond, Va., to arrange for cooperative work in child hygiene in Virginia.

Sen. Surg. FAIRFAX IRWIN, relieved from duty with the Navy and at Philadelphia, Pa.; proceed to Washington, D. C., for duty in the office of the Chief Medical Advisor of the Bureau of War Risk Insurance.

Surg. E. K. SPRAGUE, directed to make a tour of the New England States when convenient to ascertain the present status of venereal disease control work in the various states.

Surg. C. H. LAVINDER, relieved from duty at the marine hospital, Stapleton, N. Y.; proceed to Washington, D. C., for duty in the marine hospital division.

Passed Asst. Surg. C. P. KNIGHT, relieved at Chattanooga, Tenn., proceed to Camp Sevier, Greenville, S. C., and assume charge.

Passed Asst. Surg. R. H. HETERICK, relieved at the marine hospital, Savannah, Ga.; proceed to Rotterdam, Holland, for duty in the office of the American Consul General.

Passed Asst. Surg. J. A. WATKINS, report to the director of the Hygienic Laboratory for duty in the transfer of hospital and laboratory supplies and other equipment.

Passed Asst. Su[illegible], relieved from duty with the division of venereal [illegible] or duty in the office of the Chief Medical Advisor [illegible] War Risk Insurance.

Asst. Surg. S. L. CHRISTIAN, relieved at Norfolk, Va., proceed to Savannah, Ga., and take charge of the marine hospital.

[illegible] WILLIAM S. BEAN, Jr., proceed to Lakehurst, N. J., [illegible] to ascertain their suitability for a hospital of this [illegible]

[illegible] T. B. H. ANDERSON, report for temporary duty in the [illegible] the Chief Medical Advisor of the Bureau of War Risk [illegible]

Surg. J. C. TRAVERS (Reserve), relieved at the Baltimore quarantine station; proceed to the marine hospital, Boston, Mass., pending assignment to the Coast Guard Cutter *Tallapoosa*.

Asst. Surg. LEE H. CURRAN (Reserve), proceed to the marine hospital, San Francisco, Calif., pending assignment to Coast Guard Cutter *Unalga*.

Acting Asst. Surg. J. B. ELLIOTT, relieved at Little Rock, Ark., proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. M. P. McNEIL, relieved at Lonoke, Ark., proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. M. H. WATTERS, relieved at the Bureau. Proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. WILLIAM A. WILSON, proceed to Washington, D. C., for conference relative to the work of venereal disease control [illegible] ew York.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ILLINOIS

Chicago

Personal.—Dr. Martin B. Jelliffe, formerly of Mansfield, Ohio, who was recently discharged from the Medical Corps, U. S. Army, has located in Springfield.——Dr. Edmund J. Doering, Chicago, has been commissioned Lieut.-Col., M. C., U. S. Army.

INDIANA

Venereal Disease Clinic.—Dr. William F. King, Acting Asst. Surg., U. S. P. H. S., Indianapolis, announces the opening of the fifth free venereal disease clinic of the state at East Chicago. The other clinics are at Evansville, Anderson, Muncie and Indianapolis.

Society Organized.—Physicians of Ripley County met in Osgood, recently, and organized the Ripley County Medical Society, and elected Dr. Lafayette T. Cox, Napoleon, president; Dr. John N. Hess, New Marion, vice president, and Dr. Edward D. Freeman, Osgood, secretary-treasurer.

Personal.—Dr. Frank C. Hershey, Carmel, who recently was operated on for gallstones in Indianapolis, is reported to be improving.——A, Parker Hitchens, Philadelphia, formerly director of the H. K. Mulford biologic laboratory, has been appointed associate director of the biologic department of the Lilly Laboratory.

State Board Divisions.—February 24, four new divisions were created in the state board of health with proper appropriations: division of rural hygiene, $25,000; division of venereal diseases, $29,000; division of tuberculosis, $10,000, and for the distribution of 30,000 copies annually of the Indiana Mothers Baby book, $5,000.

IOWA

Personal.—Walter E. Foley, Lieut., M. C., U. S. Army, Davenport, who entered the United States service in June, 1918, and is on duty with the American Expeditionary Forces in France, has been appointed chief of the surgical service of Base Hospital No. 53.

Commencement.—The midwinter commencement exercises of the State University of Iowa College of Medicine, Iowa City, were held, March 27. The chief speaker was Dr. Dean D. Lewis of the University of Chicago, who spoke on "Medical Experiences of the Last Offensive."

MARYLAND

Army Nurses to Be Treated Here.—The Surgeon-General of the United States Army has selected the Sheppard and Enoch Pratt Hospital at Towson as one in which army nurses who have been mentally affected are to be brought for treatment. It is thought that with the facilities offered at the hospital for indoor and outdoor treatment they will rapidly recover their normal condition. About fifteen will be admitted immediately, and the hospital is making preparations to take in as many as possible.

Personal.—Capt. Sydney M. Cone is confined to his home in Baltimore with an attack of pleurisy. He was taken ill while on duty at Fort McHenry, U. S. Army General Hospital No. 2.——Col. Thomas R. Boggs, Baltimore, formerly of the Johns Hopkins Unit, has arrived from overseas on the transport *George Washington*.——Amos F. Hutchins, Capt., M. C., U. S. Army, Baltimore, an associate at the James Buchanan Brady Institute, Johns Hopkins Hospital, who served for a time with the British forces and was later transferred to the Johns Hopkins Base Hospital in France, addressed the South Baltimore Medical Association at a recent meeting on "Experiences in the Front Line Trenches and in No Man's Land."

MASSACHUSETTS

Personal.—Dr. Hugh Cabot, Boston, has been appointed director of clinics in the subdivision of venereal diseases of the state department of health. His efforts will be toward the standardization of work in the sixteen state approved venereal clinics and toward familiarizing the physicians of the state with the opportunities for expert treatment and advice to be found in them.

Cutter Lectures.—The Cutter lectures on "Preventive Medicine and Surgery" were delivered at the Harvard Medical School, March 17, by Harry E. Mock, Lieut.-Col., M. C., U. S. Army, Chicago, Division of Reconstruction of Disabled Soldiers, War Department, on "Industrial Medicine Considered from the Economic Viewpoint," followed by "Reclaiming of Disabled," illustrated by moving pictures; and by Dr. Alice Hamilton, special investigator, U. S. Department of Labor, Chicago, on "Industrial Poisoning in the United States," considered under the following heads: "Lead," April 2; "Other Organic Poisonings," April 3; "Poisons of the Aromatic Series, and of the Fatty Series," April 4.

MICHIGAN

Diphtheria Epidemic.—An epidemic of diphtheria is reported from the village of Pottersville. Schools have been closed, and several families have been placed under quarantine.

Campaign Against Venereal Disease.—The process of internment instituted as a war emergency measure, Nov. 12, 1917, by the state board of health for the care and treatment of cases of venereal disease has been exceedingly successful and a complete card catalogue system has been prepared which contains the fullest information possible, although the rights of the individual are safeguarded. About 8,000 women have been tabulated thus far. The legislature is to be asked to pass more stringent laws to enforce the reporting of such cases, and to appropriate $300,000 to carry on this work for the next two years. There are eight hospitals in the state with 321 beds for the care of venereal patients and 1,300 patients have already been sent to hospitals. They are being given the choice of internment or of being placarded and quarantined, but it is possible for patients afflicted with venereal disease, to receive treatment at public health clinics without publicity.

MINNESOTA

Clinical Association Organized.—The medical staff of the Minneapolis City Hospital has organized a clinical association with an initial membership of about fifty. Dr. Archa E. Wilcox is president; Dr. Harry A. Britton, vice president, and Dr. John E. Hynes, secretary-treasurer of the organization.

MISSOURI

Neurologic Clinic.—A scientific session of the Buchanan County Medical Society was held at State Hospital No. 2, St. Joseph, March 19. The superintendent of the hospital, Dr. Porter E. Williams, entertained the society at dinner, and this was followed by a neurologic clinic arranged by the hospital staff.

Personal.—Dr. Hanau W. Loeb, dean of the St. Louis University School of Medicine, is one of the administrators of the estate of the late John T. Miliken, millionaire chemist of St. Louis, and has found the duties imposed on him so numerous that the school has appointed Dr. Don R. Joseph, professor of physiology, as assistant dean.——Dr. G. Canby Robinson, St. Louis, associate professor of medicine and acting dean of Washington University Medical School, has been elected dean of the school.——Buchanan County Medical Society has indorsed the administration of Dr. Porter E. Williams, superintendent of State Hospital No. 2 at St. Joseph, and congratulated Governor Gardner on the appointment of Dr. Williams. The society also indorsed the work of Dr. Hasbrouck DeLamater, city health officer, and Dr. Daniel Morton, St. Joseph, member of the social welfare board, and petitioned the mayor of St. Joseph to reappoint them.

Clinic Organization.—The St. Louis Medical Society has appointed a committee to organize the clinics in St. Louis with the view of correlating the clinical material of the city for the purpose of establishing a method of announcing the work to be done in each clinic from day to day in order that the local profession and visiting physicians may have better opportunity to observe the work done by St. Louis physicians. It is proposed to form an organization that will furnish a central bureau of information concerning the schedule of cases so that a physician who desires to see work in some particular branch of medicine can be directed to a clinic without delay. The following members have been appointed chairmen of committees in each of the branches mentioned: Charles H. Neilson, medicine; John R. Caulk, genito-urinary; Jules M. Brady, pediatrics; Harvey S. McKay, surgery; William W. Graves, neurology; William E. Sauer, nose and throat; Frederick J. Taussig, gynecology and obstetrics; Edward H. Higbee, Jr., eye, and J. Archer O'Reilly, orthopedics.

Progress of Medical Legislation.—House Bill 859, introduced by Dr. Asier J. Speer of Bollinger County, amends the medical practice act by striking out the word "reputable" and substituting therefor the words "legally chartered." By this substitution the state board of health would be compelled to examine the applicants of any medical college that held a legal charter, irrespective of the character, quality and quantity of equipment the college possessed or of the reputability of its staff and methods of graduating of students. The bill further amends the present act by omitting certain words in the premedical educational qualifications which would further lower the standards of medical education in Missouri. House Bill 360 (the chiropractic bill) is in the committee on criminal jurisprudence; it has been reported that the committee contemplates amending the bill so as to require applicants in chiropractic to obtain a license from either the state board of osteopathy or the state board of health; in the senate (S. B. 232) this bill has been reported unfavorably. House Bill 905 (limiting fees physicians may charge to $1.50 a call, $1 in the office and $10 for any obstetric case) is in the committee on public health; in the senate no companion bill has been introduced. House Bill 909 (writing prescriptions in English) is in the committee on publi[illegible]lth; in the [illegible] (S. B. 662) this measure has bee[illegible]d unfavo[illegible]enate Bill 663 (placing on surge[illegible]rden of [illegible]t due care has been exercised in [illegible] when [illegible]n is sued for malpractice) is in [illegible] on [illegible]ary institutions. House Bill 1[illegible] has been passed with the co[illegible] fro[illegible] ph[illegible] by the injured [illegible] usi[illegible] e senate the bill [illegible] ee.

[illegible] alth officers [illegible] uate course [illegible] eing given [illegible] artment of

Drug Bill Defeated.—The bill sponsored by Governor Smith which provided that the recently created state commission of narcotic drug control be abolished and its functions transferred to the state department of health was defeated in the assembly, March 27, by a motion which refused to release it from committee. A similar action was taken by the senate a week before.

Committee to Investigate Alcoholic Content of Medicines.—The state excise committee, in reporting the bill which gives to the state excise commission authority to enforce the prohibition amendment to the United States constitution, has amended the bill to provide for a committee of three physicians and two druggists to pass on the 250 medicines now in the market for the purpose of determining whether they are beneficial, harmless or intoxicating.

Personal.—Dr. Hermann M. Biggs, state commissioner of health, has been granted six weeks' leave of absence and is new en route to France, where he will aid in the establishment of an international Red Cross society.——Dr. Francis J. Cahill, health officer of Hoosick Falls, has been commended in a letter to the Surgeon-General of the Army by Brig.-Gen. Edward B. Billingham, for services rendered to sick soldiers while in the German prison camp at Graudenz, West Prussia.

County Tuberculosis Survey.—As a result of the tuberculosis survey recently held in Clinton County, the board of supervisors has appropriated $1,200 and the necessary traveling expenses for a county tuberculosis nurse, for one year. ——Immediately following the survey, four persons made application for care at Ray Brook or at a county tuberculosis hospital.——As a result of a county tuberculosis survey, a neglected case of empyema was found and sent to a hospital, where immediate operation undoubtedly saved the child's life.

New York City

Dinner to Colonel Lambert.—A complimentary dinner to be tended to Col. Alexander Lambert, American Red Cross, at the Hotel Commodore, April 12, at 7 o'clock, in recognition of his work for the medical profession in the state and nation and overseas.

Harvey Society Lecture.—The seventh lecture of the Harvey Society series will be given at the New York Academy of Medicine, April 12, by Dr. Stewart Paton, Princeton, N. J., formerly Major, M. C., U. S. Army, on "Human Behavior in War and Peace."

Personal.—Dr. Simon Baruch is seriously ill with heart disease at his home.——David Edward Hoag, Capt., M. C., U. S. Army, has received his discharge from the service and has been appointed attending neurologist at the New York City Hospital, and also visiting neurologist at the West Side Hospital and chief of the clinic on nervous and mental diseases at the West Side Dispensary and Hospital.

Hospitals Ask Voice in Legislation.—The Hospital Conference of the City of New York, representing forty institutions in this city which maintain nurses' training schools, have appealed to the commissioner of education for a hearing on the proposed legislation affecting hospitals. This action was taken because several bills have been introduced into the legislature during the past few years which, if passed, would revolutionize the training of nurses in hospitals. At present there is an amendment to the nursing bill at Albany which provided for the training of short term nurses or attendants. The hospitals fear that there is a demand for this class of attendants; but since the hospitals will be given the training of these students, they feel that they should be consulted in the matter.

OHIO

Personal.—John D. O'Brien, Major, M. C., U. S. Army, Canton, on duty with the American Expeditionary Forces, was promoted to lieutenant-colonel, M. C., February 15.——Dr. William S. Fox has been appointed a medical inspector in Cleveland public schools.

Educational Committee Appointed.—At a meeting of the council of the Ohio State Medical Association, held in Columbus, March 10, Drs. Charles Edwin Briggs, Cleveland; William D. Porter, Cincinnati, and Harry E. Hunt, Newark, were appointed an educational committee to continue the campaign against venereal diseases. Lectures and clinics for physicians are to be held throughout the state, at which the latest and most improved methods of combating venereal disease will be explained and discussed.

Hughes Bill Passes House.—The Hughes bill, which establishes each city of over 25,000 population as a separate health district, and each county area outside of such city as a separate district, has passed the lower house by a vote of 81 to 14, and is now before the senate for consideration. Under this bill the maximum number of districts possible will be 102, as compared with 2,150 at present. The bill authorizes combinations of districts to reduce the overhead expense. Each district is to have a full-time health officer and at least one public health nurse, with such additional health employees as are necessary to provide an adequate health administration.

OREGON

Sanitary Engineer to Be Employed.—At the instance of Representative Childs, the Ways and Means Committee has rescinded its action reducing the appropriation for the state board of health, and has added $10,000 to the appropriation for the employment of a sanitary engineer.

State Mental Hygiene Committee.—The following named physicians have been appointed a state mental hygiene committee, which will support the bill now pending in the legislature providing for the survey of state institutions for the insane and feebleminded: Dr. Jonah B. Wise, temporary chairman; Dr. Samuel Kohs of Reed College, secretary; Drs. E. S. Conklin and E. B. DeBusk of the University of Oregon; Bishop Walter T. Sumner; Drs. J. Allen Gilbert and William House, both of Portland; Hon. Robert Tucker and Miss Manley of the Allen School for Defective Children; Dr. Robert E. L. Steiner, superintendent of the State Hospital for the Insane, Salem; Drs. Walter H. Williamson and Wilson D. McNary, Pendleton, and J. M. Smith.

PENNSYLVANIA

Instruction Planned.—Plans for assembling the county and other medical inspectors of the state department of health in camps during the coming summer for instructions in their duties and to learn the latest methods of combating epidemics have been worked out by State Health Commissioner Edward Martin. Special courses in sanitation will be given and lectures will be delivered by eminent specialists.

Philadelphia

Personal.—Dr. James R. Bean, Ashbourne, a suburb of Philadelphia, has been chosen health commissioner of Oshkosh, Wis., and has also been appointed director of the state cooperative laboratory there.——Dr. C. Howard Moore, who enlisted in April, 1917, went to France as a lieutenant with the Rainbow Division and was commissioned a captain in 1918, was promoted to major, March 1. and assigned to take charge of Evacuation Hospital No. 27, Army of Occupation, at Coblenz, Germany. This hospital is limited to fracture cases.

TEXAS

Health Legislation Outlined.—The special committee appointed by the governor to investigate health conditions in the state has reported its findings together with a number of recommendations. Chief among these are that the members of the state board of health be appointed, as are the regents of the university, for a term of six years, one third being appointed every two years; that there be established, in the department of health, bureaus of communicable diseases, sanitary engineers, rural sanitation, child hygiene, public health nursing and laboratories and health instruction in charge of a director; that the state be divided into eight or more sanitary health districts each in charge of a full-time district health officer; that bureau directors and health directors be appointed by the state health officer with the approval of the state board of health, and that adequate appropriations be provided with which to carry on the work of the department. The commission also reported that in west Texas there are more than 30,000 persons constantly suffering from tuberculosis and that there are more than 12,000 cases each year of typhoid fever, both of these conditions being preventable. Hookworm disease and malaria also prevail, and the state has the unenviable reputation that more than one out of every five babies born in the state die before reaching 1 year. The commission that made this report was appointed Nov. 27, 1918, and has held fifteen sessions in Austin and Dallas.

VERMONT

Personal.—Dr. Henry A. Ladd has resigned as inspector of the Vermont State Board of Health to become superintendent of the Mary Fletcher Hospital, Burlington.——Dr. Henri L. Pache, Danville, has been appointed inspector for the Vermont State Board of Health.——Dr. F. Thomas Kidder, Woodstock, has been elected president of the state board of health.——Dr. William T. Slayton, Morrisville, has been appointed a member of the state board of health, succeeding Dr. Charles S. Caverly, Rutland, deceased.

WISCONSIN

Appropriation for Influenza Fight.—The common council of Milwaukee, March 21, voted full power to Health Commissioner Ruhland to proceed against the spread of influenza, and provided him with a fund of $10,000 to be used in the educational campaign against the disease.

New Officers.—At the annual meeting of the Wisconsin Antituberculosis Association, held in Milwaukee, March 21, Dr. John W. Coon, Stevens Point, was elected president; Dr. John R. Currens, Two Rivers, vice president; Dr. J. Gurney Taylor, Milwaukee, recording secretary, and Dr. Gustave Windesheim, Kenosha, a member of the executive committee.

Personal.—Dr. Valentine A. Gudex, Milwaukee, has been appointed deputy state health officer for the fourth sanitary district, succeeding Dr. Ira F. Thompson, Eau Claire, acting assistant surgeon, U. S. P. H. S., now in charge of venereal diseases.——Dr. L. Rock Sleyster, Waupun, has been appointed physician in charge of the Milwaukee Sanitarium, Wauwatosa, succeeding Dr. Richard Dewey. Dr. Dewey will continue to reside in Wauwatosa, and will be in regular attendance at the sanatorium acting as medical director.——William Theodore K. Cradwell, Capt., M. C., U. S. Army, and formerly an associate at Milwaukee Sanitarium, will soon resume his position as assistant superintendent.——Dr. Francis A. Malone, Waterford, charged with manslaughter, has been acquitted. A car driven by Dr. Malone, who was making an emergency call, collided with another car, the driver of which suffered a fracture of the skull from which he died a short time later.——Otho A. Fiedler, Major, M. C., U. S. Army, Sheboygan, and on duty with the American Expeditionary Forces, has been transferred to Base Hospital No. 121, and promoted to lieutenant-colonel.——Dr. Arthur H. Broche, city physician of Oshkosh for eighteen years, and for six years health commissioner, has resigned.——Dr. James P. Lenfestey, DePere, has been reelected president of the DePere Health Association.——Dr. George E. Horne, Black River Falls, who has been ill for several months with rheumatism, is now convalescent.——Dr. Glenford L. Bellis, Major, M. C., U. S. Army, Wauwatosa, who had been assigned to tuberculosis work in France, has been reassigned for service in Italy.

CANADA

Personal.—Lieut.-Col. Jabez H. Elliott, M.D., Toronto, has gone to Mexico for a month's holiday.——Major John F. Burgess, M.D., Owen Sound, Ont., has been gazetted an officer of the British Empire.——Capts. Robert D. MacKenzie and A. R. Hagerman have been gazetted for the Military Cross.——Major Frank H. Pratten, Toronto, who was formerly for several years in charge of the Muskoka Free Hospital for Consumptives, is on his way home from overseas where he has been since October, 1915.

Epidemics in North Labrador.—News of the shocking conditions in North Labrador has reached St. John's, N. F., as a result of influenza, smallpox and measles which swept that coast the past winter. Earlier news showed that the deaths numbered 25 per cent. of the population. In some sections, influenza raged for four months and is said to have carried off 50 per cent. of the inhabitants. Okak, with a population of more than 200, is entirely wiped out. At Hebron over 200 died and left only a remnant to bury them. Many outposts which are invariably connected with the central mail posts have failed to report, and the conclusion is that all have perished by these diseases. Medical aid was unobtainable, and the full extent of ravages of the diseases will not be known until the opening of navigation.

Uniform Vital Statistics for Canada.—A bill has been introduced into the Ontario legislature which is the result of a plan decided on at the recent conference of public health officials at Ottawa. By it there will be provided a system of uniform registration for the dominion in the registration of births, marriages and deaths. Divisional registrars must hereafter report monthly instead of quarterly; and physicians, nurses, clergymen, undertakers and others with a knowledge of the facts will be compelled to supply information demanded by the registrar-general. There is a clause in the bill which provides that when there are births at sea, when the mother is on her way to Canada, or when births occur across the border, in hospitals, they are to be registered in the province, provided the mother is a citizen of Canada.

LATIN AMERICA

Deaths in the Profession.—Dr. **A. R. Blanco**, a prominent physician of Cartagena, Colombia, senator and leader in medical and public health matters, professor of medicine and natural sciences in the medical school of the University of Cartagena, of which he was also rector. Dr. Blanco served at times as the representative of Colombia in diplomatic negotiations in the United States and at Panama. The flags were at half mast throughout the entire department by official order the day of his funeral.——Dr. **G. Olano** of Lima, Peru, a local authority and writer on public health and medicolegal questions, aged 47.

Spanish Sanatorium in New York.—La Unión Benéfica Española of New York City is appealing for funds for the organization of a sanatorium in the neighborhood of New York City, where Spanish speaking patients will find hospital and sanatorium treatment and hear their own language spoken. It is stated that already more than $13,000 has been subscribed for the purpose. All donations should be sent to the Unión Benéfica Española (Fondo Sanatorio) 8 State Street, New York City. The union now has 2,848 members, and during the recent influenza epidemic spent over $6,000 for medical and hospital assistance of the members.

GENERAL

Health Board Meeting.—The Conference of State and Provincial Boards of Health will be held at Atlantic City, June 6 and 7, following the Conference of the Surgeon-General of the United States Public Health Service with the state and territorial health officials at Washington, June 4 and 5.

American Life Convention.—The ninth annual meeting of the Medical Section of the American Life Convention was held at the Signal Mountain Hotel, Chattanooga, Tenn., March 26 to 28. The chief topics for discussion were: "Influenza," "The Practical Significance of Important Changes in the Adult Death Rate," and "Health Conservation and Its Importance to Life Insurance." The following officers were elected: chairman, Dr. Frank L. Truitt, Indianapolis; vice chairman, Dr. George E. Crawford, Cedar Rapids, Iowa, and secretary, Dr. Frank L. B. Jenney, Chicago (reelected).

Committee to International Conference.—The American committee to the International Red Cross Conference at Geneva to be held thirty days after the signing of the peace treaty sailed for the preliminary meetings, March 15. The committee consisted of Dr. Fritz B. Talbot, Boston; L. Emmett Holt, New York, and Samuel McC. Hamill, Philadelphia, pediatricians; Col Frederick F. Russell of the Army Medical Corps; Dr. William H. Welch, Baltimore; Hermann M. Biggs, commissioner of health of the state of New York, and Dr. Edward R. Baldwin of Saranac Lake, N. Y., director of the Trudeau Foundation.

Meeting of Association of American Medical Colleges.—At the twenty-ninth annual meeting, held in Chicago, March 4, the following officers were elected for the ensuing year: president, Dr. George Blumer, New Haven, Conn.; vice president, Dr. A. C. Eycleshymer, Chicago; secretary-treasurer, Dr. Fred. C. Zapffe, 3431 Lexington Street, Chicago; chairman of executive council, Dr. Irving S. Cutter, Omaha. An entirely new constitution and by-laws was adopted, the principal differences from the old set of rules being in the requirements, high school and college premedical, for admission to medical schools. The requirement in physics was reduced to six semester hours, and in biology it was decided that six semester hours of college work were acceptable for students who had completed a year of biology in high school. The other modifications were mainly in phraseology.

Scientific Research Appropriations.—The United States Interdepartmental Social Hygiene Board announces the following appropriations from the Scientific Research Fund of the board:

Leland Stanford Junior University Medical School: (1) Investigation into more effective treatment in acute and chronic gonorrhea, under the direction of Dr. R. L. Rigdon, clinical professor of genito-urinary surgery, and Dr. Alfred B. Spalding, professor of obstetrics and gynecology, San Francisco, $2,300. (2) The permeability of the meninges to antisyphilitic drugs—an attempt to increase their permeability, under the direction of Dr. Henry G. Mehrtens, clinical professor of neurology, San Francisco, $2,300. (3) Investigation into more effective methods of treating syphilis, under the direction of Dr. Harry E. Alderson, clinical professor of dermatology, $2,600; total, $7.200.

University of Michigan, College of Medicine and Surgery: (1) A research for an improved method of demonstrating *Spirochaeta pallida* in human tissues, under the direction of Dr. Alfred S. Warthin, professor of pathology, Ann Arbor, $6,000.

Protection Against German Reinvasion of Our Chemical Industries.—The alien property custodian has conceived an idea that if German chemical patents should be placed in the hands of any American institution strong enough to protect them, a real obstacle might be opposed to German importations after the war, and the American industry might be freed from the prohibition enforced by the patents against manufacture. The organization of a corporation to be known as the Chemical Foundation, Inc., is recommended in which practically every American manufacturer will be a stockholder, but in which the number of voting shares held by any one interest will be so restricted that improper control will be impossible. It will hold the 4,500 German chemical patents, which have already been transferred to it for a consideration of $250,000. Nonexclusive licenses only will be granted to all proper American applicants at a small fee, and to the United States without fee. All surplus income is to be used for the retirement of the preferred stock and thereafter for research work looking toward the advancement of chemical and allied science and industry. The foundation has a capitalization of half a million dollars of which $100,000 is for common stock and the balance for preferred stock. After paying for the patents transferred to it, it will still have $250,000 working capital and will accordingly be in a position to prosecute vigorously any infringement proceedings which may become necessary when German manufacturers attempt to regain their American trade.

Red Cross War Council Ceases to Exist.—Mr. Henry P. Davison, chairman of the American Red Cross War Council, which was appointed by President Wilson, May 10, 1917, to carry on the work of the American Red Cross during the war, issued a statement, March 19, regarding the facts that led to the cessation of the work of the council, March 1. The war council, immediately after the signing of the armistice, instituted studies to determine when the strictly war work of the American Red Cross would be sufficiently matured to enable the directions of affairs to be assumed by the permanent staff headed by Dr. Livingston Farrand, Boulder, Colo., and this transition was made, March 1. During the past twenty-one months, donations of cash and supplies have been given to the Red Cross exceeding $400,000,000 in value, and in addition contributions of service have been given without stint and often with great sacrifice by millions of patriotic men and women. When the war opened the American Red Cross had a membership of about 500,000; at present there are more than 17,000,000 full paid members and about 9,000,000 members of the Junior Red Cross. The organization had about 9,000 person on its rolls in France, and of these the services of 6,000 are still being required. Their active operations are still in progress in Archangel and in Siberia. A commission has been dispatched to carry supplies and to work in the Balkan countries, a second commission has just reached Poland equipped with physicians and nurses, medical supplies and food for children and invalids; a third commission has been appointed to aid the relief of the suffering of Russian prisoners in German prison camps, and a fourth commission is working in Palestine.

Fellowships for Physics and Chemistry.—The National Research Council has been entrusted by the Rockefeller Foundation with the expenditure of an appropriation of half a million dollars within the period of five years, to promote fundamental research in physics and chemistry in educational institutions in the United States. The primary feature of this project is the initiation and maintenance of a system of national research fellowships, which are to be awarded by the council to persons who have demonstrated ability in research to enable them to take investigations at educational institutions to make adequate provision for the effective prosecution of research in physics and chemistry. Among the important results expected to follow from the execution of the plan are: opening of a scientific career to a larger number of able investigators and their more thorough training in research; increase of knowledge regarding the fundamental principles of physics and chemistry, and creation of more favorable conditions for research in the educational institutions of this country. The project will be administered by the research fellowship board of the council, which is composed of Henry A. Bumstead, professor of physics in Yale University; Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, New York; George E. Hale, director of Mount Wilson Observatory; Elmer P. Kohler, professor of chemistry, Harvard University; Robert A. Millikan, professor of physics, University of Chicago; Arthur A. Noyes, director of the Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, and Wilder D. Bancroft, professor of physical chemistry, Cornell University. The research fellowships will be awarded to persons who have had training at an American university or scientific school equivalent to that represented by the doctor's degree. The salary will be ordinarily $1,500 for the first year. The appointment will be for one year, with eligibility for successive reappointments usually with an increase in salary. It is expected that fifteen or twenty fellowships will be available this year. Applications should be sent to the secretary of the Research Fellowship Board, National Research Council, 1023 Sixteenth Street, Washington, D. C. Applications will be received up to Sept. 1, 1919, for fellowships available during the coming academic year, but a limited number of appointments will be made on the basis of applications made before April 20, this year.

FOREIGN

War Mortality Among German Physicians.—The *Hospitalstidende* quotes a Berlin medical journal of last November to the effect that the latest casualty lists bring to 663 the number of physicians killed in the war; 422 died from illness; 212 were taken prisoner and 72 are missing.

Ruggi and Durante Reach the Age Limit.—The two widely known surgeons, Dr. G. O. Ruggi of Bologna and Dr. F. O. Durante of Rome, reach the age limit this spring and retire from the chairs of clinical surgery and operative medicine in their respective universities. Durante, with Baccelli, founded the *Policlinico* twenty-six years ago.

Proposed Cancer Hospital in Norway.—The *Ugeskrift for Læger* relates that the Norwegian Cancer Fund Committee has collected 600,000 kronen (approximately $150,000) toward a national hospital for care of and research on cancer. Some funds from another source are soon to be available, and the second week of February a general appeal by cards is to be made throughout the country, and in Christiania a lecture on cancer is to be held, and some concerts. The aim is to provide an institution where the inoperable cases can get radiotherapy, etc.

Old Nomenclature Preferred.—The Anatomical Society of Great Britain and Ireland, at its meeting in London, March 1, received and unanimously adopted the report of its committee on nomenclature, "That it sees no reason for departing from the use of the old nomenclature as the recognized medium of description for employment in anatomical textbooks and departments, or by medical men in general; on the other hand, it thinks that there are very good reasons to be urged against the adoption of any other nomenclature for this purpose."

Red Cross Work in Siberia.—The American Red Cross has opened a well-appointed hospital four versts (2½ miles) from the city of Omsk, Siberia, with 400 beds and capable of extension to 1,000. This hospital is one of the series of medical institutions which have been organized in Siberia, chiefly through the efforts of Dr. R. B. Teusler of Tokyo, chairman of the Red Cross Commission to Serbia.——The American Red Cross has opened a hospital at Tumen with accommodations for 500 patients; also dental clinics at Cheliabinsk and at Ekaterinburg. A hospital has also been opened at Petropavlovsk for typhus fever with a capacity of 400 beds.

Deaths in the Profession Abroad.—Dr. **H. Chaput,** head of a surgical clinic at the hôpital Lariboisière, Paris, aged about 56.——Dr. **F. de Cortejarena,** of Madrid, aged 83. He was one of the founders of the Sociedad Ginecologica in 1874, and was professor of obstetrics and pathology at the University of Madrid for many years, chief at one time of the Public Health Service, delegate to many international medical congresses, and representative in the senate of the Academia de Medicina and the province of Madrid, and was long on the editorial staff of the *Siglo Medico.* On the occasion of his fiftieth professional anniversary, he published his memoirs under the title "Tiempo Pasado."——Dr. **G. Sterzi,** professor of comparative anatomy at the University of Cagliari. His published works dealt mainly with the comparative anatomy of the nervous system.——Dr. **O. V. Lassen,** a prominent surgeon of Denmark, aged 74.——Dr. **S. H. A. Rambusch** of Copenhagen, aged 57.——Dr. **G. Pandolfi,** associate professor of nervous and mental diseases at the University of Naples, editor of the *Annali di Neurologia.* His death while in military service has recently been confirmed.

MEXICO LETTER

Mexico City, March 24, 1919.

An Alcoholic Inundation

On account of the approaching nation wide prohibition of alcohol manufacture in the United States, some of the brewers and distillers of the United States have been studying whether they could move their plants to Mexico, establishing breweries and distilleries in Mexico City and elsewhere. We are by no means behind other nations in the matter of alcoholism, and if we could count on having an abundant, well distilled and comparatively inexpensive drink, like beer, it might induce those who drink pulque (the fermented juice of the agave cactus) to take in its place a less harmful beverage. Pulque, in addition to its noxious action from the large content of alcohol, is harmful further from the putrefied substances which it contains and the large number of *living microbes in it.* For a long time, distinguished clinicians have been attributing to the abuse of pulque the prevalence of affections of the digestive apparatus in the central tableland of Mexico, as also the frequency of dysentery and of abscess in the liver. As we know now the important rôle played by *Endameba histolytica* in these last mentioned processes, it is not at all venturesome to assume that the white liquor supplies a predisposing factor at least, and may in certain cases be the vehicle for the amebas. The contamination may occur in the fluid itself, or from contact with the hands and lips of the workmen or in the *cueros* in which it is usually kept.

"Education Will Make a New Mexico"

John Emerson Smith, director of the San Antonio *Express* and the weekly *Evening News,* has been visiting the various departments of the university here. He has collected data for an article to be published in his journals under the above heading, analyzing the workings of the administrative functions and the intellectual progress of our seats of learning. His object is mainly to make known in the United States the progress of Mexico in all that refers to university instruction and the public schools.

The Academy of Medicine

The Academia de Medicina announces that there are some vacant places in the sections of medical natural history, bacteriology, internal medicine, hygiene and pathologic anatomy, and invites those who would like to compete for the vacant posts to present the necessary credentials. Dr. T. G. Perrín, a Spanish physician resident here for some years, applied for the post in the section on pathologic anatomy, presenting therewith a monograph on the cytodiagnosis of syphilis, based on 200 cases. His article made a favorable impression, and this with his scientific antecedents, insured his acceptance. Dr. J. Arroyo, collaborator in Dr. Perrín's laboratory and professor of histology in the medical school here, is soon to present a report on the Lange colloidal gold reaction in the diagnosis of syphilis of the nervous system.

The Medical School

The courses in English and French are only now under way in the Facultad de Medicina although these courses were inaugurated last year. The course in French is in charge of Madame Facio, from Paris, and the English course is to be taught by Sr. T. Montaño, a graduate of a London college. Dr. F. Ocaranza has begun a course on biology (*curso libre*), and a course in German has been established, with biweekly classes. The gymnasium for the students will soon be conveniently installed according to the notice sent out by Dr. R. Amor, director of the Facultad, so that the students can cultivate their physical strength along with their mental faculties and thus will obtain a harmonious all-around development.

Welfare Work

A number of charitable persons are contributing cash or clothing for children to aid in the work of the *Sociedad* Protectora del Niño, which aims to aid homeless and friendless children. There is a wide field for such work here.

A group of Mexicans living at Los Angeles, Calif., have formed an association to collect a fund to aid needy persons there with clothing and medicines. Two physicians, Drs. J. M. Samaniego and F. Zarraga, are on the board of the society, which is under the patronage of the mayor of Los Angeles.

Personal

Dr. P. Sosa has been appointed professor of hygiene in the naval school, the Escuela Naval, recently reinaugurated at Vera Cruz.

Dr. J. A. Pérez, director of the Hospital Morelos has returned from New York where he went on official business, to purchase medicines and surgical instruments, the cost totaling about $85,000.

PARIS LETTER

PARIS, March 2, 1919.

Infectious Diseases and Prophylaxis in the Army

At the second meeting of the Société de biologie, devoted to the biology of the war, Dr. Louis Martin discussed the subject of diphtheria carriers. He described the technic employed in searching for carriers and the examination of diphtheria bacillus colonies. As to the contagiousness of the disease, he found that the patients are the most important carriers. They harbor the most virulent bacilli, the mucous membrane of the throat furnishing the greatest number of colonies in serum swab cultures. Successive cultures contain progressively fewer colonies in proportion to the interval since the beginning of the disease. As a rule, in two thirds of the cases at least, the bacilli disappear completely one month after the onset of the disease. They may, however, be found for a long time afterward, for three and even six months, but such instances are very rare. The impending disappearance of the bacilli is shown by the lessening of the number of colonies; diminution in virulence, and association of other bacteria with the diphtheria bacillus. As the colonies of the latter become fewer in number, an increasing number of staphylococci is seen.

Carriers should be sought for in the neighborhood of the patient. They are classified as "recent," that is, persons who have contracted diphtheria from another patient. The "old" carriers are met with among persons in environments long contaminated with diphtheria. These "old" carriers have apparently normal throats, so far as appearances go; the mucous membranes are healthy, and they do not contract the disease. They can, however, spread it. They are known as "healthy" carriers. As a rule, the diphtheria bacilli do not disappear suddenly and definitely from the throat of carriers; a culture taken today may not show any bacilli, whereas a culture made several days later may show large numbers of bacilli. Therefore, it is held that such persons will be declared not to be carriers only after two negative cultures, made at six days' interval. A simple angina may be the occasion for the return of the bacilli in culture, even in large numbers; often they then disappear rapidly and definitely.

As to prophylaxis: Isolation of the patient is of prime importance, because he is the most formidable carrier; he is the principal cause of all epidemics. Whenever a case of diphtheria makes its appearance in a unit, the doctor should at once make an investigation of persons in the environment of the patient, isolate all persons who have buccopharyngeal lesions, and, if necessary, inject them with antitoxin. Disinfection is very essential after a case of diphtheria, more so when many cases have existed, for removing the carrier would not prevent the spread of the disease. Prophylactic injections of antitoxin should be given, especially when the epidemic is very grave and when the disease develops very rapidly.

Dr. Charles Dopter, physician in chief of the army, and professor of epidemiology in the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce, reported on meningococcus carriers in the zone des armées during the war. At the beginning of the war the medical officers anticipated during the first winter and spring a considerable number of cases of cerebrospinal meningitis, as its development would be facilitated by the bringing together of large military organizations. But nothing of the kind occurred, strange to say; and now, after four years of war, it may be said, on the basis of the published figures, that meningococcic infection was one of those which seemed the most negligible in the zone of the armies. These figures are as follows: In 1915, there were 1,075 cases of cerebrospinal meningitis; 452 cases in 1916, and 406 cases in 1917.

From these statistics it appears that the total number of cases observed in the active forces is quite inconsiderable. In fact, it is worth noting that compared with the incidence of meningitis among the troops quartered in the interior the foregoing record is only one fourth as high. Cerebrospinal meningitis appeared in the army only in a sporadic manner, striking here and there a very few of the military men out of very large units, so that it has been impossible to connect up the various outbreaks so few and far apart have they been. However, several outbreaks did take on an epidemic character. In several instruction camps in which men were crowded together in the restricted area of cantonments, where there was not room to give them sufficient freedom of movement, Dopter had an opportunity of observing several foci which sprang up suddenly, six or eight cases appearing inside of forty-eight hours, extending even to the neighboring units so that there was an evident relation to the groups first attacked. What is true of cerebrospinal meningitis as a disease is equally true of the carriers. Just as the disease itself does not spread but remains localized, so the meningococcal infection in the carriers is only revealed by a rhinopharyngitis which remains localized in one spot where the pathogenic germ fortifies itself without reaching out and attacking other organs.

Prophylaxis should consist in isolating meningococcus carriers, whether ill or not, so as to protect the unit involved against possible contagion from them. This specific complete prophylaxis may be accomplished as follows: When the first case of meningitis is seen (1) isolate everyone around who can be suspected until the exact nature of the causative organism has been determined; (2) if it is the meningococcus, take cultures with a view to isolating the carriers and making such bacteriologic examinations as will detect these carriers; (3) isolate known carriers until the germs have disappeared from the rhinopharynx; treat them by means of local antiseptic applications to the nasal fossae. This program seemed hardly possible to carry out thoroughly in war times; nevertheless, it was done at all points. This prophylaxis of meningococcus rhinopharyngitis was rendered easier of course by the slight extension of the epidemic meningococcus element. It is possible that the extension of the disease may have been prevented in part by the measures applied, especially by the activity of the army laboratories.

Prophylaxis Against Rabies

The Académie de médecine recently discussed measures for combating the increase in the number of hydrophobia cases which has been noted in all parts of France since the beginning of the war. The discussion was participated in by Drs. Kirmisson, Railliet and Bard, and a resolution was adopted urging that (1) the attention of legislators and the authorities be called to this health problem of manifest and progressive gravity; (2) that all cities as well as country districts use all possible means to impound all dogs which are roaming around at large; (3) an earnest appeal be made to the public in general to cooperate to the fullest extent to help to eradicate rabies. Placing a license tag on the dog has yielded good results in other countries as well as in certain French cities, therefore it should be made obligatory, as establishing the responsibility of the owner of the dog.

Aeroplane Transportation of Wounded in Sahara

Dr. T. Tuffier recently detailed to the Académie de médecine the services rendered by the aeroplane in the transportation of the severely wounded and of medical officers called to care for them in south Oran, Morocco, and in south Tunis. The organization in charge of this work established an aerial route extending 597 kilometers into the desert. Landing stations and food depots were established along this route. Dr. Tuffier stated that to facilitate the handling of the wounded, these aeroplanes should open at the side, and they should be supplied with Bréguet's apparatus so as to make them as rapid as possible and give them greater stability in making a landing. Besides the aeroplane ambulances, which should be reserved for the cases of severe wounds of the thorax and abdomen and of the legs, reconnoitering and bombing aeroplanes can be used to carry the less severely wounded. In the Sahara the only really serious obstacles which the aeroplanes had to overcome were caused by the temperature, which determines the dangerous air currents and eddies in the strata of superposed and overheated air, and the sirocco, because of the sand clouds which this wind raises.

Influenza Epidemic

The epidemic of influenza which had declined has broken out anew in a most disquieting manner. In view of the increase in the number of the sick, the Assistance Publique has taken measures to meet the increase in the number of hospital admissions (an average of 240 per day): 200 beds have been set aside at the Salpêtrière, 200 at the hôpital des Petits-Ménages, and 180 at the hôpital Cochin. The epidemic has assumed grave proportions not only in Paris but in several of the départements.

Plans of the Paris Medical School

The Paris medical faculty held a reunion February 22 for the demobilized students who have been released from the army so that they can take up their medical studies. These students are members of the classes preceding the 1914 class; they have seen fifty-four months of military service, some of them having been in the service before the declaration of war. The Faculty has established special didactic and practical courses for these students, providing for intensive teaching which will shorten the annual course to six months without interfering with the general courses of instruction.

Medical Officers Victims of Professional Duty

The medical group in the parliament has passed resolutions calling on the ministers of war and marine to consider medical officers who died while on service in military or naval hospitals as having fallen on the field of battle. The battle-field of these men was the hospital in which they served, therefore all honors of having fallen while fighting should be accorded them, as is done in the case of combatants in the line.

LIMA LETTER

Lima, Peru, Feb. 28, 1919.

The Pandemic of Influenza

First Lima and then the rest of Peru had and are still suffering from the ravages of the pandemic of influenza. Statistics show that in the capital of the republic the mortality from this cause trebled the total mortality during the months of November and December. More than 600 deaths can be attributed to influenza, and the total mortality for the year was thus raised from 5,000 to 6,500. The symptomatology, epidemiology and the course of the epidemic do not differ from those reported elsewhere throughout the world. At the same time it may be noted that the second outbreak of the epidemic, with its grave and bronchopulmonary forms, did not spread at Lima to the same extent as at other points. Perhaps during the first cycle, which was of a benign and catarrhal form, almost the entire population had been attacked and immunized.

The Academy of Medicine

The Academia Nacional de Medicina has recently elected to regular membership Dr. O. Hercelles, professor of pathologic anatomy and chief of the Laboratorio de Investigaciones Clinicas of the Hospital 2 de Mayo, and also Dr. A. Corvetto, in charge of the Dispensario antituberculoso Byron. The Academia has also elected to membership three physicians recently banished from Chile where they had been practicing at Iquique. The reason for the banishment is that they are natives of Peru. Dr. M. Alcedán was elected to regular membership, and Drs. Neuhaus and Parodi to associate memberships. This act is as a protest against the arbitrary procedure of the Chilean government.

The Spanish Edition of The Journal

The appearance of the Spanish edition of The Journal has been welcomed at Lima with marked favor. It is regarded as a decisive advance on the road of friendship and close scientific relationship between North and South America.

Relapsing Fever at Lima

Dr. Zevallos recently encountered a case of relapsing fever in the San Bartolomé military hospital. The subject was a soldier who had not been away from Lima for many months. This discovery demonstrates the existence of relapsing fever in our midst. The patient presenting the disease was treated with arsphenamin, a clinical cure following a dose of 0.45 gm.

Reform in the Care of the Insane

A philanthropist here, Don V. L. Herrera, has presented the medical staff of the Magdalena Colony Asylum for the Insane with the sum of 20,000 libras to be devoted to the transformation of the care of the insane. The gift has been accepted by the authorities in charge of the institution, the Sociedad de Beneficencia of Lima. The projected reforms have met with the opposition of the sisters of the St. Vincent de Paul order who have had charge of the institution. The conflict has not yet been settled, and it seems inevitable that the sisterhood will withdraw from the work entirely. The affair is creating much discussion among the public generally and in scientific circles.

The Public Hospitals, Etc., of Lima

The Sociedad de Beneficencia of Lima in its various hospitals and asylums cared for 19,519 needy persons January to November, 1918. There were 2,394 deaths among them. The total expense was 85,400 gold libras. A Peruvian libra is almost $5. The dispensaries were visited by 80,410, including 28,919 first-time applicants, and medicines were dispensed without charge 108,718 times.

LONDON LETTER

London, March 12, 1919.

The Influenza Epidemic

Influenza continues to claim many victims, especially in Scotland, the North of England, and the Midlands. In the last weekly record there were 580 deaths from influenza and pneumonia in Glasgow, the highest record in the city's death rate, being 50 per thousand per annum. The number of deaths from the disease in Manchester last week was 191 in addition to sixty-three deaths from pneumonia and seventy-eight from bronchitis. In Leeds last week, 127 deaths were due to influenza as compared with eighty-one the previous week. In Birmingham last week there were 157 deaths, and the death rate was 31.6, as against the normal rate of 12. The total deaths numbered 527, a considerable increase. Elementary schools and nurses have responded to the call for help, and more are wanted. The Huddersfield Corporation has given notice that the Local Government Board has ordered that influenza shall be deemed an infectious disease. All the elementary schools in the Colne Valley have been closed for a fortnight. In Dublin the epidemic is spreading. Last week the deaths from the disease in the city numbered 143, an increase of sixty-three on the previous week. It has been decided to close the Mansion House to concerts, meetings and lectures until the disease has abated.

At a conference held at the Institute of Hygiene, Sir Malcolm Morris, the president, criticized the recommendations of the Local Government Board The solution of common salt and potassium permanganate recommended for washing the nostrils and throat he described as a horrible mixture. He had found a solution of colloidal silver beneficial. Sir St. Clair Thomson said the disease was splashed on us by persons talking, laughing, coughing and sneezing at anybody within 10 feet of them. Persons known to have the disease should be isolated, not only entirely but also locally, by making them wear veils when anybody came near them, and those in attendance on them or those who risked being near them should also wear masks or veils. Persons who in an omnibus or tube coughed without putting up their hands, or sneezed without putting up their handkerchiefs, should be prosecuted for indecency. He was inclined to think youth and fitness predisposed to the disease. In a sanatorium which he visited regularly, the consumptive patients had contracted influenza in a much milder form than their healthy attendants. But the possibility of other causes besides differences of pulmonary condition contributing to this result had to be taken into account. People might be working in an open-air sanatorium without believing in open windows for themselves. A nose in a healthy condition he did not think there was any need to wash out. He was opposed to the use of potassium permanganate or any other irritating antiseptic. The type of the influenza epidemic was certainly changing.

A government report on influenza in India states that the first influenza epidemic in Bombay city was in June last, and was responsible for more than 1,600 deaths. A subsequent virulent outbreak occurred in September, October and early in November, during which period the mortality in Bombay city exceeded the normal by 14,678. Besides bacteriologic investigation, relief measures consisted of treatment in hospitals, house-to-house visitation, supply of free milk, woolen jackets to prevent pneumonia, opening of roadside dispensaries in several wards, and supply of free medicine.

The Danger of the Spread of Lice and Itch After Demobilization

Apprehension has been felt as to the spread of lice and itch among the civil population as the result of demobilization, with consequent spread of lice-borne diseases. The Local Government Board has communicated with the Army Council on the subject and has been informed that special and thorough arrangements have been made by the army authorities, both abroad and at home, for cleansing, bathing, disinfestation, issue of clean clothing and like measures, to be undertaken systematically before the men return to their homes on leave or on discharge. Should health officers learn of instances in which men thus returning on demobilization to their homes remain infested with vermin, the facts should be communicated to the board for their information and that of the war office. The two departments are cooperating to obtain all possible information as to the occurrence of infectious diseases among the men returning to this country.

The British Association of Radiology and Electrotherapy

A new society, the British Association of Radiology and Electrotherapy, of which Sir James Mackenzie Davidson is president and Dr. Knox and Dr. Cumberbatch are secretaries, has been formed. It is felt that the time has come to place the teaching of radiography on a sounder basis, and that the many ill-qualified persons who have been carrying on radiographic work should be discountenanced. Membership is limited to qualified physicians and dentists and to others whose qualifications and scientific attainments are considered satisfactory to the committee. The society has approached the University of Cambridge with a view to granting a diploma after examination in radiology and electrotherapeutics. Meanwhile, representations have been made to the medical schools in London and the provinces, with the object of providing the necessary teaching of the subjects for the examination of the diploma. It is also proposed to establish postgraduate courses of study and research, and to create a British school of radiology and electrology. This, it is hoped, will be coordinated with other similar schools throughout the world.

A Martyr to Science

Major H. G. Gibson, Royal Army Medical Corps, who in conjunction with two other workers, Major Bowman, Canadian Army Medical Corps, and Captain Connor, Australian Army Medical Corps, apparently made the important discovery published in the *British Medical Journal* of Dec. 14, 1918, that the influenza germ is a filter-passer, has fallen a victim to the very virulent strain of the germ with which he was experimenting. He caught the disease and succumbed to pneumonia. A career of great promise has closed. Educated at Guy's Hospital, he joined the army medical corps in 1907. In 1914 he joined the "specialist class" in bacteriology and made the highest marks in the examination which followed. When the war broke out, he left his scientific work for active service in France, where he was severely wounded by a shell. He recovered, but was unfit for active service and was appointed to the vaccine department of the Royal Army Medical College. He devoted himself to research on protection against bacillary dysentery which culminated in the production of his antidysenteric serovaccine. The reports on this remedy have been favorable, though it is too soon to state its final position.

Lectureships on Children's Diseases

At the Royal Hospital for Sick Children, Great Ormond Street, two lectureships on children's diseases have been founded by private donors, who have each given a sum of $25,000. This will be the first occasion of holding special lectureships on diseases of children. It is laid down that the lectures shall be both systematic and clinical, and that the lecturers shall be respectively a visiting physician and a visiting surgeon to the hospital in the wards of which the clinical instruction shall be given. The medical lecturer is to have "a consultative connection" with the Royal Maternity Hospital so that children born there and requiring medical or surgical treatment may be brought directly into touch with the hospital.

Marriages

Thomas Perrine Edmundson, Lieut., M. C., U. S. Army, Pittsburgh, to Mlle. Raphaelle Degeunes of Paris, France, February 24.

William Barclay Parsons, Lieut., M. C., U. S. Army, New York City, to Miss Rose Saltonstall of Boston, March 22.

S. Brock McGeorge Dear to Miss Marjorie Pohle, both of the Bronx, New York City, March 15.

Roland Ferdinand Wear to Miss Jane Mae Thrall, both of Williamsport, Pa., March 22.

Morris Leff to Miss Miriam G. Kramer, both of New York City, February 11.

Deaths

Abel Fitzwater Price ⊕ Commodore, Medical Director, U. S. Navy (retired), Sandwich, Mass.; University of Pennsylvania, Philadelphia, 1868; aged 71; fleet surgeon for Admiral Dewey in the battle of Manila Bay in 1898; who entered the Navy, Nov. 10, 1868, and was retired, Dec. 13, 1909, after thirteen years and ten months of sea service on attaining the age of 62 years; died in a hospital in Springfield, Mass., March 22.

James Forrest Todd, Chicago; Bellevue Hospital Medical College, 1863; aged 78; physician of Cook County and physician in chief for the Detention Hospital for the Insane in 1889, and city physician of Chicago, and physician in chief of the Infirmary of the House of Correction and Smallpox Hospital in 1893 and 1894; died at his home, March 24, from cerebral hemorrhage.

George Washington Goins ⊕ Lieut., M. C., U. S. Army, Tooele, Utah; Marion Sims College of Medicine, St. Louis, 1898; aged 47; a specialist on diseases of the eye, ear, nose and throat; who entered the Army in November, 1918, and was stationed at Jefferson Barracks, Mo.; died at Jefferson Barracks, March 14.

Lionel Andrius Anderson ⊕ Lieut., M. C., U. S. Army, St. Paul; Washington University, St. Louis, 1916; aged 31; a specialist in roentgenology; assigned to duty with the British Army Medical Corps; died in Namur, Belgium, February 17, from pneumonia following influenza.

Robert Goldthwaite ⊕ Capt., M. C., U. S. Army, Montgomery, Ala.; Bellevue Hospital Medical College, 1893; aged 46; on duty with the American Expeditionary Forces in France; died in Base Hospital No. 26, Allery, France, September 30, from meningococcus meningitis.

Frank Reader Rix, Flushing, N. Y.; Harvard Medical School, 1879; aged 65; for eighteen years supervisor of musical education in the public schools of Manhattan borough; died in the New York Skin and Cancer Hospital, New York City, March 16.

George W. Kunz, New York City; Bellevue Hospital Medical College, 1887; aged 54; assistant surgeon to the New York Eye and Ear Infirmary; and attending otologist to the St. Bartholomew's Clinic; died in Lenox Hill Hospital, March 4, from pneumonia.

James Moore King ⊕ Chewalla, Tenn.; University of Nashville, Tenn., 1896; aged 65; professor of chemistry and clinical dermatology and secretary of the medical department of his alma mater; was struck by a train, January 5, and killed.

William A. Cochran, Danville, Ill.; Medical College of Ohio, Cincinnati, 1873; aged 68; physician of Vermilion County for seven years; died at the home of his son in Perrysville, Ind., March 16, from cerebral hemorrhage.

James Woods, Schuyler, Neb.; Western Reserve University, Cleveland, 1870; aged 74; at various times physician of Schuyler and Colfax County; a veteran of the Civil War; died at his home, March 12, from arteriosclerosis.

Bennie Logan Englerth ⊕ Lieut., M. C., U. S. Army, Anna, Ohio; Eclectic Medical Institute, Cincinnati, 1915; aged 25; on duty with the American Expeditionary Forces in France; died in France, December 16, from pneumonia.

Emmet James Stewart, Cumberland, Md.; University of Maryland, Baltimore, 1914; aged 37; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, January 28, from pneumonia following influenza.

William J. S. Stewart, Act. Asst. Surg., U. S. P. H. S., Caracas, Venezuela; University of Virginia, Charlottesville, 1891; aged 52; surgeon in the Army transport service during the war with Spain; died in Caracas, March 11.

Martin Luther Mench, Jersey Shore, Pa.; University of Pennsylvania, Philadelphia, 1866; aged 73; a member of the Medical Society of the State of Pennsylvania; died at his home, February 17, from cerebral hemorrhage.

Albert N. Richardson, Chicago; Rush Medical College, 1872; aged 77; for eighteen years a quarantine physician in the health department; died suddenly, March 24, from heart disease, while making a professional call.

Carl Cleveland Smith ⊕ Lieut., M. C., U. S. Army, Akron, Ohio; Ohio State University, Columbus, 1911; aged 32; on duty with the 37th Division, American Expeditionary Forces in France; died in France, February 17.

⊕ Indicates "Fellow" of the American Medical Association.

John F. Kirkpatrick, London, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 69; a member of the Ohio State Medical Association; died at his home, March 12, from pneumonia following influenza.

James N. Mendenhall ⊕ Plano, Texas; University of Maryland, Baltimore, 1880; aged 61; formerly clinical professor of medicine in Baylor University College of Medicine, Dallas, Texas; died at his home, March 3.

Max Landesman, New York City; Medical College of Indiana, Indianapolis, 1892; aged 55; a member of the Medical Society of the State of New York; died at his home, March 16, from arteriosclerosis.

William Ernest Barker ⊕ Chanute, Kan.; American Medical College, St. Louis, 1878; aged about 73; for a time treasurer of the Kansas Medical Society; died at his home, March 13, from cerebral hemorrhage.

James Thomas Meehan, New York City; New York University, New York City, 1882; aged 59; a member of the Medical Society of the State of New York; died at his home, March 16, from heart disease.

Lucius Thomas Ingham, Lee, Mass.; Bellevue Hospital Medical College, 1886; aged 64; died in the House of Mercy Hospital, Pittsfield, Mass, March 15, two days after an operation for abscess of the neck.

James Parker Blunk, Ottawa, Kan.; Ensworth Medical College, St. Joseph, Mo., 1900; aged 44; a member of the Kansas Medical Society; died at his home, March 18, from pneumonia following influenza.

Lucy N. Tappan, Urbana, Ohio; Woman's Medical College of Pennsylvania, Philadelphia, 1886; aged 71; for twenty-seven years an instructor in her alma mater; died at her home, March 15.

Theodore D. Finck ⊕ Louisville, Ky.; Kentucky School of Medicine, 1882; aged 56; died in the Norton Memorial Infirmary, Louisville, March 22, from septicemia due to an infected finger.

George Everett Herchel, Mechanicsville, Iowa; Loyola University, Chicago, 1916; aged 28; died in the University Hospital, Iowa City, March 17, a day after an operation for appendicitis.

Loving Flint Hubbell, Sidney, Ohio; Starling Medical College, Columbus, Ohio, 1901; aged 42; a member of the Ohio State Medical Association; died at his home, March 9, from pneumonia.

James Eugene Cooper, Shrewsbury, N. J.; College of Physicians and Surgeons in the city of New York, 1867; aged 74; died at his home, March 19, from cerebral hemorrhage.

William J. Donald, Riverside, Calif.; Albany (N. Y.) Medical College, 1877; aged 83; for many years a practitioner of Tunnel City, Wis.; died at his home, about March 18.

Jeremiah W. Brinson, Wrightsville, Ga.; Savannah (Ga.) Medical College, 1875; aged 66; a member of the Medical Association of Georgia; died at his home, March 11.

Rembert Trezevant, Evangeline, La.; Memphis (Tenn.) Medical College, 1869; aged 78; a member of the Louisiana State Medical Society; died at his home, March 7.

Perrin O. Mauldin ⊕ Decatur, Ga.; Georgia College of Eclectic Medicine and Surgery, 1910; aged 42; died in a hospital in Atlanta, March 17, from pneumonia.

Levi K. Slifer, Philadelphia; University of Pennsylvania, Philadelphia, 1872; aged 64; died at his country home, near Blue Bell, Pa., March 16, from heart disease.

Joseph Boardman Moore, Aylett, Va.; Jefferson Medical College, 1856; aged 84; a member of the Medical Society of Virginia; died at his home, March 23.

Clara Ann Martin Cooper, Henderson, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1898; aged 49; died at her home, about March 15.

Stephen R. Wilson, Celina, Ohio; Medical College of Fort Wayne, Ind., 1881; aged 89; died at the home of his son in Liberty Township, March 14.

Horace Clay Wiggins, Succasunna, N. J.; Albany (N. Y.) Medical College, 1873; aged 74; died at his home, January 12, from bronchopneumonia.

Leonard M. Charlton, Cleveland; Homeopathic Hospital [illegible]ge, Cleveland, 1865; aged 60; died at his home, March 5.

[illegible]as B. Lanier, Oliver, Ga.; Oglethorpe Medical Col[illegible]ah, Ga., 1860; aged 88; died at his home, March 1.

[illegible]hill, Hale, Mo.; Joplin (Mo.) College of Physi[illegible]eons, 1883; aged 76; died at his home, March 5.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

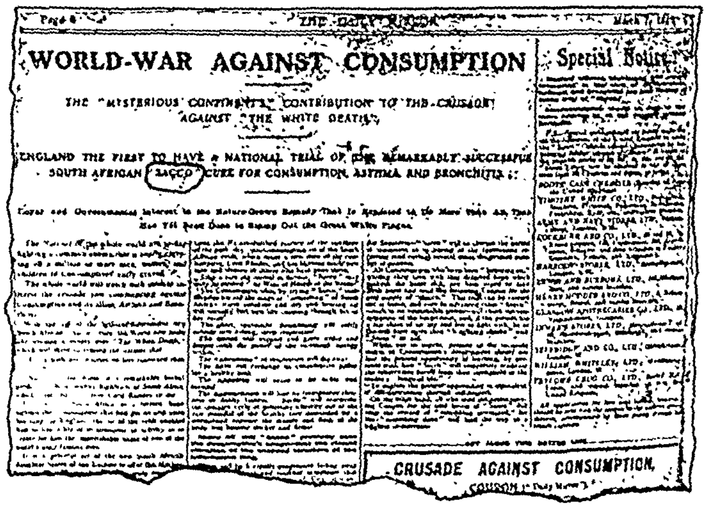
STEVENS CONSUMPTION CURE

A Discredited London Quack Attempts to Exploit Canadian Veterans

The Journal has received the following letter from Dr. J. H. Holbrook, physician-in-charge of the Mountain Sanatorium for the treatment of pulmonary tuberculosis at Hamilton, Ont.:

> "We are treating returned tuberculous soldiers, who are receiving 'literature' from Chas. H. Stevens of 204-206 Worple Road, Wimbledon, London, S.W., and some of our men are being duped into sending their money to him for treatment.
>
> "We have tried to warn them that they are wasting their money, but we have no definite information on the matter and if you can furnish us with any of the particulars, we would be greatly obliged in the interest of our patients. We have a booklet giving extracts from the medical evidence given in the consumption cure libel actions, by Stevens, against the British Medical Association, and know that there must be considerable information available."

Profitable quackery dies hard and quackery of the "consumption cure" type is peculiarly profitable. For years C. H. Stevens has been in that most disreputable of businesses—exploiting the consumptive.[1] He was shown up by the London *Truth* years ago, and brought suit for libel against that publication—without obtaining, however, any satisfaction. His nostrum has been exploited in South Africa, England and the United States. It was analyzed by the chemists for the British Medical Association, and the method of exploitation exposed in the British Medical Association's book, *Secret Remedies*. This was in 1908. After waiting three years, Stevens sued the association. At the first hearing in 1912, the jury failed to agree; at the second hearing in 1914, the jury declared that the association's strictures were not libelous but fair comment. Stevens then appealed the case—and again lost.



WORLD-WAR AGAINST CONSUMPTION

THE "MYSTERIOUS CONTINENT'S" CONTRIBUTION TO THE CRUSADE AGAINST "THE WHITE DEATH."

ENGLAND THE FIRST TO HAVE A NATIONAL TRIAL OF THE REMARKABLY SUCCESSFUL SOUTH AFRICAN "SACCO" CURE FOR CONSUMPTION, ASTHMA AND BRONCHITIS.

Special Notices

CRUSADE AGAINST CONSUMPTION.

Greatly reduced facsimile of a portion of a large advertisement of "Sacco" in a London paper in 1910.

The analysis made by the British chemists showed the stuff to contain no active drugs except alcohol, of which there was over 23 per cent., and glycerin, of which there was less than 2 per cent. The estimated cost of the ingredients of a bottle

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1. The Journal has discussed this man's business at various times. See issues of Sept. 3, 1910; April 5, 1913; Sept. 12, 1914; June 12, 1915.

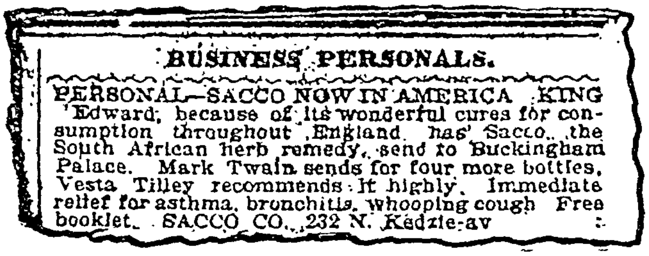
of Stevens "consumption cure" was 3 cents; it sold for $1.25. Stevens published what he termed a "formula" for his nostrum, thus:

> "Its formula is 80 grains of Umckaloabo root and 13¼ grains of Chijitse to every ounce, prepared according to British Pharmacopeia method."

Making a pretense of frankness by glibly giving meaningless names evolved from a fertile imagination is a scheme as old and as unscrupulous as quackery itself. But the unknown may always be counted on to inspire awe and Stevens' crude deceit still seems to be a financial asset.

THE "WONDERFUL NATIVE HERB" HUMBUG

Nor was the "formula" the only piece of theatrical claptrap worked by. Stevens. He claimed to have learned of "Umckaloabo" while in South Africa some years ago where he went because he had consumption. While in Basutoland he lived in a tent and partook of a decoction of a native root "Umckaloabo"—given him by a kafir! Needless to say, it cured him! The commercial possibilities of "Umckaloabo" appealing to Stevens he went to Capetown, South Africa, where he put the stuff on the market under the name of "Sacco"—"Stevens African Consumption Cure, Original"—doing business under the trade name of "Sacco, Limited." Capetown was a verdant field for Stevens made a large amount of money while there, and opened a branch office in London. At a time that he was clearing a net profit of $15,000 a year, he got into the courts and found it expedient to leave Capetown.



BUSINESS PERSONALS.

PERSONAL—SACCO NOW IN AMERICA KING Edward, because of its wonderful cures for consumption throughout England, has Sacco, the South African herb remedy, send to Buckingham Palace. Mark Twain sends for four more bottles. Vesta Tilley recommends it highly. Immediate relief for asthma, bronchitis, whooping cough Free booklet. SACCO CO., 232 N. Kedzie-av

Facsimile (slightly enlarged) of an advertisement of "Sacco" that appeared in a Chicago newspaper in November, 1908. In spite of the fact that Vesta Tilley, King Edward and Mark Twain were all said to be greatly impressed with the marvel, "Sacco" failed to get a foothold in Chicago.

"SACCO" BECOMES "LUNGSAVA"

He then went to Johannesburg, where "Sacco" was rechristened "Lungsava," and was sold by Stevens under the imposing trade name "South African Institute of Medicine." While here he added to his nostrum another unheard-of herb, which he called "Chijitse." Johannesburg seems to have taken to the nostrum, but after being twice convicted of violating the laws governing medical practice, Stevens left South Africa and went to England, where he located in Wimbledon, a London suburb. Here he began pushing his stuff under the old name, "Sacco."

AN INTENTIONAL FRAUD

In 1910 while at Wimbledon, Stevens was sued by a widow for $50, the sum promised by Stevens in his advertisements, to any patient whom he did not cure of consumption. The plaintiff's husband relying on Stevens' nostrum, of course, died. In giving judgment for the payment of $50 to the widow the judge thus expressed his opinion of Stevens and his "cure":

> "I will now say what I think and what I had abstained from doing before. I think this is an intentional and well-considered fraud. It is a scandalous thing that poor people should be imposed upon and led to part with their money, and to hope that those dear to them would be cured, by those processes which were nothing but quack remedies, and had not the slightest value of any kind."

In spite of the judge's eminently just characterization of Stevens and his business, this quack had the effrontery to bring suit against the British Medical Association a year later—in 1911, with results that have already been mentioned. Stevens, in his appeal to the higher courts, after losing the case, attempted to make much of what he claimed was the personal nature of the attack on him by the British Medical Association. One of the judges of the appellate court, however, pointed out that a comment may be fair even though it contains a personal attack, this rule having been clearly stated by Lord Atkinson in the classic case of *"Dakhyl* v. *Labouchere"* (1908, 2 K.B., 329), which was carried to the House of Lords in 1908, where it was laid down that:

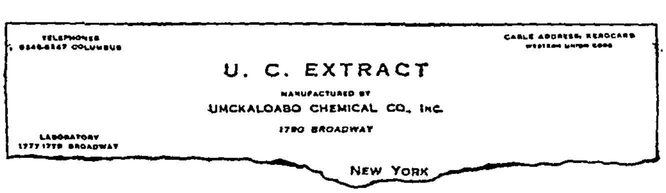
> "A personal attack may form part of a fair comment upon given facts truthfully stated, if it be warranted by those facts."

The "Sacco Co.," London, of the original Capetown Sacco concern, went into liquidation. Stevens has claimed that a man named Pickering bought the right to use Sacco from the liquidator, and that he (Stevens) no longer has any interest in the company of that name. Before leaving the "Sacco" stage of Stevens' multinamed nostrum it is worth recalling that in 1908 an attempt was made to float this humbug in Chicago. Advertisements appeared in Chicago papers describing the alleged enthusiasm for Sacco exhibited by King Edward, Vesta Tilley and Mark Twain! The Chicago venture failed.

THE UMCKALOABO CHEMICAL COMPANY

Not long after Stevens lost his case against the British Medical Association, an item appeared in an Albany, N. Y., paper, regarding the incorporation of the "Umckaloabo Chemical Company" of New York City, capitalized at a quarter-million dollars, for the purpose of acquiring the "secret processes for manufacturing a remedy for tuberculosis and other diseases, discovered by Charles H. Stevens of London." The incorporators of this new company were given as Samuel S. Ryckman, Edward A. Sprong and Irene B. Russell, all of New York City. This was in October, 1914.

In September, 1915, newspaper advertisements appeared, asking for the names of those who were suffering from tuberculosis, so that "an absolute aid in curing tuberculosis" that had been introduced in the United States from London, might be brought to their attention. There was no name signed to the advertisements; neither was the name of the preparation given. Sufferers were urged to write to Room 3240, Woolworth Building, New York City. Some who answered the advertising received a typewritten letter from the Umckaloabo Chemical Co., of 1790 Broadway, New York, which was selling "U. C. Extract." With it was a testimonial, and a typical nostrum "analyst certificate," the latter signed by one J. P. Lord of London. This same "analyst" was referred to at some length at the trial of *Stevens* v. *British Medical Association*. It appears that Lord was an employee of Stevens; he received $7.50 (30 shillings) a week. Although Stevens attempted to "play up" the analysis in the trial, he did not, at the second trial, put the analyst on the stand. The following quotations from the evidence will help one to estimate the possible scientific standing of Analyst Lord. Stevens was being questioned:



TELEPHONES

U. C. EXTRACT

MANUFACTURED BY

UMCKALOABO CHEMICAL CO., INC.

1790 BROADWAY

LABORATORY
1777-1779 BROADWAY

NEW YORK

Greatly reduced facsimile of letterhead used by the Umckaloabo Chemical Company, which attempted to exploit Stevens' nostrum in the United States in 1915. This concern also seems to have fizzled.

Question.—"Is he [J. P. Lord] alive?"

Answer.—"I do not know."

Question.—"Is he not in a Church Army Home and a dipsomaniac?"

Answer.—"I do not know."

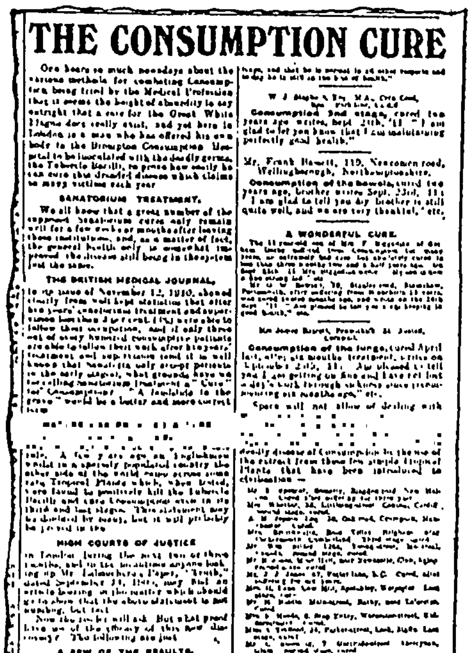
A year later—July, 1916—the same analysis and the same lone testimonial were being sent out, together with a typewritten sheet giving the "History of the Discovery of Umckaloabo." This "history" referred to the "attacks" by London *Truth* and the *British Medical Journal*, and recorded the fact that, in refutation, Stevens had sued the British Medical Association. It failed to record, however, the outcome of the libel suit, leaving the impression that Stevens was the victor. The "history" explained further that the president of the Umckaloabo Company was "Samuel S. Ryckman, former Member of Parliament of the Dominion of Canada," who had secured the American rights to "Stevens' discovery," and that "wonderful results have been accomplished by reputable physicians of New York City, who are convinced that Umckaloabo Extract has produced specific action upon the lungs"!

"SACCO" "LUNGSAVA" BECOME "U. C. EXTRACT"

In transporting this humbug across the Atlantic, still another name has been given to it. No longer is it "Sacco" or "Lungsava"; it is now "Umckaloabo Extract," or, more briefly, "U. C. Extract," the two letters standing, respectively, for "Umckaloabo" and "Chijitse." In addition to the "history," Lord's "analysis," and the one single testimonial for the "cure" itself, there were two testimonals for Mr. Ryckman, one from Adam Brown, postmaster of Hamilton, Ontario, and the other from S. D. Biggar, the mayor of Hamilton, Ontario. The letters accompanying the advertising material were signed "Samuel S. Ryckman"; one of them referred to analyst Lord as "one of the principle analysts of London, England."

Since 1916 we have received no further information regarding the exploitation of "U. C. Extract," or of the activities of the Umckaloabo Co. Whether the business failed to be the financial success that had been looked for, or whether Mr. Ryckman, after further investigation, decided to go into some more reputable line of endeavor, we are unable to say.

Now, in 1919, Stevens plies his abominable trade among the tuberculous victims of the great war. He sends to Canadian soldiers a gaudy covered booklet containing some of the testimony of his "experts" who testified at the *first* trial of his libel suit against the British Medical Association. It leaves the impression that Stevens won the suit. The booklet declares that the British Medical Association charged Stevens "with being a swindler and a quack who foisted upon the public a so-called remedy which he knew to be absolutely worthless." But it does not tell the consumptives, whose dollars are sought, that the court held the British Medical Association's charge to be the truth and a fair comment of fact!


THE CONSUMPTION CURE

THE DISCOVERER'S £1,000 GUARANTEE.

CHAS. H. STEVENS,
204, WORPLE ROAD, WIMBLEDON, S.W.

Photographic facsimile (reduced) of one of Stevens' advertisements, appearing a few years ago in a London paper. The original measured about 11 inches by 5 inches. Among the names listed in this advertisement of those who had been "cured" by Stevens' nostrum was one Miss Olley, of whom Stevens said: "Carried out of Brompton Hospital as incurable, now enjoying good health." The facts are, Miss Olley died of pulmonary tuberculosis.

The ubiquitous "analysis" of Lord—the 30-shillings-a-week "expert"—is also part of Stevens' present advertising paraphernalia. Then there is a loose-leaf booklet of testimonials. The loose-leaf idea seems a good one—commercially. The Journal has shown repeatedly in cases of testimonials for "consumption cures"—testimonials which were written in good faith by those who believed themselves benefited—that where the poor victims really had the disease and were relying on the nostrum it was only necessary to wait some months or a year or two before it was possible to obtain the death certificate of the testimonial givers. In the past this has meant that the quack must "scrap" a lot of "literature" or lay himself open to the charge of publishing testimonials from dead men. The loose-leaf method employed by Stevens will facilitate the elimination of "dead timber" at a minimum expense.

That Stevens, after being thoroughly discredited, first in South Africa and later in England, should now be trying to capitalize the suffering of Canadian soldiers who have contracted tuberculosis in the service of their country, is entirely in keeping with the moral standards of the "consumption cure" quack. The most effective protection of the sick from the wiles of men of the Stevens type is that of giving the public all the facts possible regarding such concerns. Here, briefly summarized, are the facts:

1. In 1904 Stevens was selling "Sacco" in Capetown, South Africa. When clearing $15,000 a year, he got into the courts and found it expedient to leave Capetown.
2. In 1906 Stevens was in Johannesburg, trading as the "South African Institute of Medicine" and selling his stuff as "Lungsava"; was twice convicted of violating the law and left for England.
3. In 1907 Stevens was in London selling his "cure" and in 1910 was declared by the courts to be guilty of "intentional and well considered fraud," and his "cure" denounced as "nothing but quack remedies."
4. In 1908 the British Medical Association denounced Stevens as a quack and declared his nostrum worthless; and when Stevens sued the association the courts, in 1914, agreed that the characterization was justified.
5. In 1915 Stevens' "cure" appeared in the United States under the name of "U. C. Extract," exploited by the Umckaloabo Chemical Company of New York City. This apparently was not a commercial success.
6. Today Stevens is attempting to exploit tuberculous Canadian soldiers who have acquired the disease in the service of their country.

Correspondence

ATYPICAL FORM OF STREPTOCOCCUS VIRIDANS

To the Editor:—In an article on "Prophylactic Inoculation Against Respiratory Infections During the Present Pandemic of Influenza" (The Journal, Jan. 4, 1919, p. 31), Dr. E. C. Rosenow described an atypical form of *Streptococcus viridans,* as it occurred in and about Rochester, Minn. This description corresponds so closely with that of the prevalent type of *Streptococcus viridans,* as it occurred at Camp Shelby, Miss., during the winter and spring of 1918, that I think it worth while to draw attention to it.

My description of the peculiar type of *Streptococcus viridans* at Camp Shelby, Miss., which I had the opportunity of studying only during the latter part of the epidemic (April, May and June, 1918), was presented as part of the report by Major George L. Lathrope, M. C., before the Section on Practice of Medicine at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918 (The Journal, Aug. 10, 1918, p. 451). In the discussion of Major Lathrope's paper I went a little more in detail into the bacteriologic characteristics of this organism, and into the clinical features and mortality of the cases of pneumonia and empyema, caused by an infection with this organism.

As there is no mention of Major Lathrope's report in Dr. Rosenow's paper, it is probable that he has overlooked it. This communication will possibly help to draw his attention to it, so that he will be able to add the additional information to the final report which he evidently intends to make on the prophylactic inoculations against respiratory diseases.

I might add, as a point of interest, that I have recently isolated from the lungs in a case of pneumonia that came to necropsy at Savenay, France, an identical organism which had produced in the patient a fatal pneumonia complicated by an empyema.

One of the important features of the empyemas caused by this peculiar type of *Streptococcus viridans* was the great tendency to the encapsulation of the pus. The pus formed pockets that were difficult to diagnose except by the roentgen ray. The mortality of the empyema cases was also very low, not more than 10 per cent. Both these features indicate the relative attenuation of the virulence of this organism as compared, for instance, with *Streptococcus hemolyticus*.

Abraham Zingher, Capt., M. C., U. S. Army,
Base Laboratory, Base Section No. 5.
A. P. O. 716, A. E. F., Brest, France.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS FOR STUDENTS OF SPANISH

To the Editor:—Please recommend a list of books for reviewing and extending one's knowledge of the Spanish language. The following is the type of books I have in mind:

1. Spanish-English grammar and lessons, designed for English speaking students.
2. Spanish lexicon, general.
3. Spanish lexicon, medical.
4. Set of readers, beginning with primer as used in common schools.
5. Osler's textbook of Medicine—Spanish text.
6. Other Spanish medical texts.

V.

Answer.—The number of books for "reviewing and extending one's knowledge of the Spanish language" is practically legion. All have their advantages and their defects, and choice must rest with the individual.

1. Otto-Sauer (Wycil & Co.); Cortina (R. D. Cortina Company); Berlitz; De Tornos (D. Appleton & Co.); Hossfeld (Caspar & Co.); Hall (World Book Company); Rosenthal (International College of Languages); Hugo (Sissmann & Son); Whittem & Andrade (Heath). Certain inexpensive booklets, like "Spanish Self Taught," by F. Thimm, give the phonetic pronunciation and an epitome of the grammar.

2. The standard grammar and dictionary are those of the Royal Spanish Academy (La Real Academia Española) published by Hernando y Compañía in Madrid. There are a number of Spanish-English dictionaries, practically all of which leave much to be desired. Among these are Velázquez' (D. Appleton & Co.); Cuyás' (D. Appleton & Co.); MacDonald's (Pitman); McLaughlin's (David McKay); Nelson's (Thomas Nelson & Sons); Appleton's; Wessely's (David McKay); Casares' (Saturnino Calleja).

3. There is no standard Spanish medical dictionary which can be compared to books of this character in English. Several small dictionaries have been published, mostly adaptations from the French or the German. Among these are Garnier's & Delamare's (Bailly-Baillière); and Galtier-Boissière's (Larousse).

4. Sets of Spanish readers for use in schools have been published by a number of American houses, such as the American Book Company, Ginn & Co., and D. Appleton & Company. The same houses have also published a number of more advanced books for similar use.

5. Osler's textbook of medicine—D. Appleton & Co.—has been translated into Spanish.

6. Most Spanish medical books are translations from the French or the German. In our Spanish Edition appear advertisements of some American books translated into Spanish. Among standard books written by Spanish physicians in use in Spanish schools may be mentioned:

Manual de Medicina Interna—three volumes. Publicado bajo la dirección de los Drs. Teófilo Hernando y Gregorio Marañón. Published by Ruiz Hermanos, Madrid, Spain.

Compendio de Parasitología. By Dr. G. Pittaluga and published by the Librería de la Facultad de Medicina, Calle Atocha, Madrid.

Patología General. By Dr. A. Gimeno (former minister of the interior) which can also be ordered through the foregoing booksellers.

Any reliable bookseller will order the books mentioned above, especially those in the importing business, as Brentano's, Fifth Avenue, New York, and P. B. Hoeber, 67 East Fifty-Ninth Street, New York. They could also be purchased directly from some Havana firm, as Ricardo Veloso, Galiano Num. 62, Havana.

We may add that we are now contemplating the publication of a booklet containing the English and Spanish equivalents of those terms most in use in the daily practice of a physician. Scientific terms derived from Latin and Greek are generally recognizable without a dictionary.

PREPARATION OF SURGICAL SOLUTION OF CHLORINATED SODA (DAKIN'S SOLUTION)

To the Editor:—Please publish the formula of Dakin's solution or the best solution of this kind recommended.

W. A. von Zellen, L'Anse, Mich.

Answer.—According to New and Nonofficial Remedies, 1919, surgical solution of chlorinated soda may be prepared:

1. By the electrolysis of a sodium chlorid solution. This method is applicable only where there is suitable apparatus and electric current.

2. By the action of chlorin on sodium carbonate. This may be done either by the use of a specially devised apparatus to measure the chlorin, or by the use of ampules containing a definite weight of chlorin; such ampules are introduced into a container holding a solution of sodium carbonate of the required strength, and after the container is tightly stoppered the ampule is broken to permit the chlorin to react with the sodium carbonate.

3. By the interaction of chlorinated lime ("bleaching powder") and sodium carbonate solutions with subsequent treatment with either (*a*) boric acid or (*b*) sodium bicarbonate to reduce the alkalinity, as follows:

(*a*) *Dakin's Method.*—A strong solution of hypochlorite is prepared as follows:

Mix thoroughly 150 gm. of chlorinated lime and 500 c.c. of water, and to this mixture add 105 gm. of monohydrated sodium carbonate dissolved in 500 c.c. of water. After standing several hours with frequent shaking, the mixture is filtered and a measured portion (20 c.c.) rapidly titrated with half-normal boric acid solution using *powdered* phenolphthalein as an indicator, in order to determine the amount of boric acid to be added to the remainder of the filtrate (each cubic centimeter of half-normal boric acid indicates 3 gm. of boric acid to be added). It is best to add slightly less than the calculated amount of boric acid. The concentrated solution thus prepared contains about 4 per cent. sodium hypochlorite and may be kept for a month without serious decomposition if protected from light. Before use it should be diluted to its proper strength—usually 1 volume mixed with 7 volumes water—as determined by titration.

(*b*) *War Demonstration Hospital Modification of Daufresne's Method.*—The percentage of available chlorin in the chlorinated lime to be employed is first determined.

To make about 40 liters: Place in a 20 liter container the amount of chlorinated lime indicated in the following table; mix this well with 5 liters of tap water and allow to stand several hours.

"Available" Chlorin in Chlorinated Lime, Per Cent.	Chlorinated Lime for 5 Liters Water, Gm.	Monohydrated Sodium Carbonate in 5 Liters Water, Gm.
20-26	800	700
28-34	600	490
36-42	500	390

Dissolve the designated amount of monohydrated sodium carbonate in another 5 liters of water, and pour the solution into the bottle containing the chlorinated lime; mix thoroughly and allow the calcium carbonate to settle. (If all the calcium is not precipitated, add small amounts of sodium carbonate solution until precipitation is complete.) Siphon off the supernatant liquid through a double filter. This concentrated and alkaline solution will keep for several weeks. For use it is treated as follows: A measured portion (from 20 to 50 c.c.) is titrated with 10 per cent. hydrochloric acid until the red color produced by the addition of solid phenolphthalein disappears (more solid phenolphthalein is added to determine that decolorization was not due to bleaching). The calculated amount of 10 per cent. hydrochloric acid is then added to the original specimen, having a volume designated "V." After the acid has been added, a volume the same as "V" of 6.25 per cent. sodium bicarbonate solution is added. The chlorin content of this concentrated solution is now determined by the method prescribed for the assay of solution of chlorinated soda, U. S. P., and it is then diluted to the proper strength.

This solution should meet the following requirements:

If to 20 c.c. of surgical solution of chlorinated soda about 0.02 gm. of phenolphthalein powder is added, no red color develops on agitation (*absence of excessive alkalinity*).

If to 5 c.c. of the solution contained in a test tube about 0.5 c.c. of 1 per cent. alcoholic solution of phenolphthalein is added ("squirted"), a red color should form and soon disappear (if there is no red flash, the alkalinity is too low).

If the available chlorin of surgical solution of chlorinated soda is determined by the assay method for solution of chlorinated soda, U. S. P., it should contain not less than 0.38 gm. nor more than 0.48 gm. of available chlorin in 100 gm., equivalent to not less than 0.4 gm. nor more than 0.5 gm. of sodium hypochlorite (NaOCl) in 100 gm.

BONUS TO DISCHARGED MEDICAL OFFICERS

To the Editor:—Is a medical officer who was honorably discharged from the service on Jan. 30, 1919, entitled to the bonus of $60 which is now being given to discharged soldiers? If so, to whom is an application for the bonus to be made? Please omit my name.

K. C. D.

Answer.—Yes. According to Section 1406 of the Revenue Act of 1918, all persons serving in the military or naval forces of the United States during the present war who have, since April 6, 1917, resigned or been discharged under honorable conditions (or, in the case of reservists, been placed on inactive duty), or who at any time hereafter (but not later than the termination of the current enlistment or term of service) in the case of the enlisted personnel and female nurses, or within one year after the termination of the present war in the case of officers, may resign or be discharged under honorable conditions (or, in the case of reservists, be placed on inactive duty), shall be paid, in addition to all other amounts due them in pursuance of law, $60 each.

This amount shall not be paid (1) to any person who, though appointed or inducted into the military or naval forces on or prior to Nov. 11, 1918, had not reported for duty at his station on or prior to such a date; or (2) to any person who has already received one month's pay under the provisions of Section 9 of the act entitled "An Act to authorize the President to increase temporarily the military establishment of the United States," approved May 18, 1917; or (3) to any person who is entitled to retired pay; or (4) to the heirs or legal representatives of any person entitled to any payment under this section who has died or may die before receiving such payment. In the case of any person who subsequently to separation from the service as above specified has been appointed or inducted into the military or naval forces of the United States and has been or is again separated from the service as above specified, only one payment of $60 shall be made.

The foregoing amount, in the case of separation from the service prior to the passage of the act, will be paid as soon as practicable; in the case of separation from the service after the passage of the act, payment is made at the time of discharge.

Claims for the bonus should be sent to the Zone Finance Officer, Lemon Building, Washington, D. C. The application for bonus should be accompanied by (*a*) the discharge certificate or a certified copy thereof, (*b*) a statement of all military service since April 6, 1917, and (*c*) the address to which the check should be sent.

PROCAIN ANESTHESIA

To the Editor:—1. Is there any evidence of latent injury to the dental nerves from repeated injections of procain by dentists to control hypersensitiveness of teeth when operating on them? 2. Is it possible that the irritation of from twenty to thirty injections into one section of a nerve within two or three years may produce degenerative changes or start new growth? 3. Is it a safe risk for a 15-year-old patient?

G. W. Fitz, M.D., New York.

Answer.—1. There is no evidence of latent injury to the dental nerves from repeated injections of procain to control supersensitiveness of the teeth. If an isotonic solution is used and this solution made thoroughly sterile by boiling, it is not probable that it will be injurious.

2. It would hardly seem probable that a new growth would be started by the injection of procain into the nerves supplying the teeth.

3. No bad effects need be expected from the cautious use of procain anesthesia for children 15 years of age or younger.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

District of Columbia: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Florida (H): Jacksonville, April 8. Pres., Dr. Chas. W. Johnson, 33 E. Monroe St., Jacksonville.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

Nevada: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

New Mexico: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

Oklahoma: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

Utah: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Special Courses in British and French Universities

A letter from Lieut.-Col. James A. Harvey, Perequeux Hospital Center, France, reports that British and French universities have arranged to enroll American officers and soldiers in special four-month courses in letters, science, law and medicine. The courses were to begin about February 16 and end about June 30. It is estimated that 11,000 soldiers have been enrolled and that the number will reach 20,000. Only men of excellent military character, who have completed, as a minimum, two years of college work or its equivalent, have been enrolled. For those entering the French universities a moderate knowledge of French was required. Officers and soldiers electing the courses have been placed on detail service for the period of study; they receive $2 per day for subsistence and the actual cost for room rent not to exceed $1 a day; traveling expenses are also paid by the government, but the student himself is required to pay the tuition charges which amount to about 250 francs ($48.25). Soldiers retain their full equipment without arms or ammunition. In France medical courses are being given at Toulouse, Paris and Lyons; and in the English universities at London and Liverpool.

Minnesota January Examination

Dr. T. S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, Jan. 7-9, 1919. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1918)	78
University of Illinois		(1919)	86
Harvard University		(1917)	92
Tufts College Medical School		(1911)	79
Syracuse University		(1909)	83

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1918)	Illinois
Western Pennsylvania Medical College		(1904)	Penna.
University of Toronto		(1905)	Illinois

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 14-16, 1919. The examination covered 15 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 4 candidates examined, 3 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1911)	92.7
Indiana Medical College (Purdue Univ.)		(1907)	92
Eclectic Medical Institute		(1877)	77.3
	FAILED		
Northwestern University		(1908)	67.1

Book Notices

Les Borgnes de la Guerre: Prothèse Chirurgicale & Plastique (Valois et Rouveix). Par le Dr. G. Valois, Membre de la Société d'Ophtalmologie de Paris. Paper. Price, 12 francs. Pp. 228, with illustrations. Paris: Masson & Cie, 1918.

This treatise is essentially a contribution—and a most valuable one—to military ophthalmology, especially as regards the physical reconstruction of visual organs, damaged or destroyed by engines of war. The author confines his remarks to a consideration of the borgne, or "one-eyed" victim of battle. It is a matter of regret that we have no one word in English exactly corresponding to this term. As the advertisement points out, the experienced surgeon, during times of peace, was generally able to meet the requirements of most bulbar and orbital injuries and diseases calling for removal of the eyeball. He got along with some simple form of enucleation or its substitutes, modified to suit special cases, such as exenteration, amputation of the anterior segment of the eye, etc. Now and then, but still rarely, he was called on to do a plastic operation on the lids, to restore a lost conjunctival sac, or to deal with a contracted and cicatricial socket so that the patient might wear an artificial eye.

The advent of war and the appearance of large numbers of war-wounded patients with severe orbitofacial injuries changed all this; the ophthalmic surgeon was no longer able to confine his technic to a few old and familiar methods. It seemed as if each case called for special treatment, involving some decided modification of an old or the adoption of an entirely new plan of surgical procedure. To this demand for new and more elaborate operative measures the military situation added other difficulties—insufficient stocks of prostheses (sometimes an entire lack of artificial eyes), dearth of special workmen, and so on. One of the results of these conditions was to bring about in France (as in some other countries) a coordination of the various factors in the usual supply of material—surgical and artistic—for the benefit of those soldiers whose wounds required them. In addition to these precautions, the medicomilitary authorities of the Thirteenth Region created a studio for the study of the subject and for the manufacture of ocular and orbital masks and other prostheses for the improvement of the cosmetic appearance of those unfortunates with extensive orbital injuries. The output of this studio is pictured in both the text and plates of the volume.

The name of Dr. Valois is familiar to ophthalmic surgeons, and he has freely given us not only his own wide experience, but also that of other well-known operators. The book abounds in descriptions and illustrations of the many methods employed to relieve the great variety of injuries involving the tissues of the face, lids and orbital walls. Especially does the author discuss the numerous plastic operations now in vogue, and he describes the steps of these operations in detail. In fact, the monograph may be regarded as an oculoprosthetic textbook with special chapters on orbital masks, molds and other cosmetic contrivances. The one criticism one might make is of the illustrations—both the colored plates and the black and white cuts in the text are very poor, and are entirely unworthy of this otherwise admirable treatise. However, many of them are useful as diagrams, and since diagrammatic illustration in a work of this sort is of prime importance, one may accept them as meeting the chief demand.

The Surgery of Oral Diseases and Malformations: Their Diagnosis and Treatment. By George Van Ingen Brown, D.D.S., M.D., C.M., Major, Medical Officers' Reserve Corps, U. S. Army. Third edition. Cloth. Price, $7. Pp. 734, with 570 engravings. Philadelphia: Lea & Febiger, 1918.

This edition, with the exception of a chapter that has been added on war surgery, does not differ materially from the edition immediately preceding. In connection with the chapter on war surgery there are a number of illustrations showing the results of gunshot wounds of the face and jaws, together with methods for plastic and other restorations, methods of splinting of fractured jaws, and bone grafting. The illustrations in this chapter and the description of cases are for the most part drawn from the results of the experiences of a number of different surgeons who were actually engaged in reconstruction work, in the hospitals of France. The book is comprehensive, covering most of the diseases, injuries and malformations found about the face, mouth and jaws.

Social Medicine, Medical Economics and Miscellany

Program of the Public Health Service, Intended Especially to Meet After-the-War Needs

This program meets urgent national needs by outlining health activities which are practicable and which will yield the maximum result in protecting national health and diminish the annual toll of thousands of lives taken by preventable diseases and insanitary conditions. The success of this program will depend on the active cooperation of federal, state and local health authorities. Experience has shown that this cooperation can best be secured on the federal aid extension principle.

1. Industrial hygiene:

(*a*) Continuing and extending health surveys in industry with a view to determining precisely the nature of the health hazards and the measures needed to correct them.

(*b*) Securing adequate reports of the prevalence of disease among employees and the sanitary conditions in industrial establishments and communities.

(*c*) National development of adequate systems of medical and surgical supervision of employees in places of employment.

(*d*) Establishment by the Public Health Service, in cooperation with the Department of Labor, of minimum standards of industrial hygiene and the prevention of occupational diseases.

(*e*) Improvement of the sanitation of industrial communities by officers of the Public Health Service, cooperation with state and local health authorities, and other agencies.

(*f*) Medical and sanitary supervision by the Public Health Service of civil industrial establishments owned or operated by the federal government.

2. Rural hygiene:

(*a*) Federal aid extension for establishment and maintenance of adequate county health organizations in counties in which the county and state governments, separately or together, will bear at least one half (usually two thirds) of the expense for reasonably intensive rural health work; county health officer to be given status in national health organization by appointment as field agent of the Public Health Service at nominal salary; sanitary inspectors and health nurses also to be given official status in the Public Health Service.

(*b*) Detail of specially trained officers of the Public Health Service to formulate and carry out, in cooperation with local authorities, intensive campaigns for the sanitation of groups of rural towns, the work to be directed especially toward securing safe water supplies, cleanly disposal of human excreta, pasteurization of milk supplies, and bedside control of cases of communicable disease.

(*c*) Studies by a special board of service officers to determine improved methods of rural sanitation, the studies to be confined to the most practical and essential phases of the subject.

(*d*) Widespread dissemination of the simple rules for rural sanitation through various governmental and civil agencies, such as the bureaus and divisions of the Department of Agriculture, the Farm Loan Board, agricultural colleges, public-school boards, farmers' associations, and women's clubs.

3. Prevention of the diseases of infancy and childhood:

(*a*) Through cooperation with the Children's Bureau, the American Red Cross, and other recognized agencies in promoting measures for child and maternal welfare.

(*b*) Through prenatal care by promoting:

(1) The adoption of measures for the adequate care and instruction of expectant mothers through visiting nurses, prenatal clinics, lying-in facilities, attention during confinement, and regulation of the practice of midwifery under medical supervision.

(2) Safeguarding of expectant mothers engaged in industries.

(*c*) Through infant-welfare work, by promoting:

(1) The accurate registration of all births and measures for adequate care of babies in homes, welfare stations, and day nurseries.

(2) Instruction of mothers by visiting nurses. The enforcement of prophylactic measures to prevent blindness in the new-born.

(3) Safeguarding of milk supplies and establishment of pasteurization plants.

(*d*) Through supervision of children of preschool age, by promoting:

(1) The organization of divisions of child hygiene in state and local health departments.

(2) Instruction by visiting nurses in general, personal, and home hygiene, and inspection for physical defects and the control of communicable diseases.

(3) The establishment of clinics for sick children.

(*e*) Through supervision of children attending school, by promoting:

(1) The supervision of the home and school environment, including sanitation of school grounds and school buildings.

(2) The maintenance of health supervision of school children by school nurses and school physicians to detect and correct physical and mental defects and to control communicable diseases.

(3) Mental examinations of schoolchildren to determine and prescribe suitable treatment and training for children who fail in class work.

4. Water supplies. National development of safe water supplies:

(*a*) By extending surveys already made by the Public Health Service of water supplies, checked by laboratory analyses when necessary, to be done by national, state, local, or university personnel and laboratories.

(*b*) Introduction and extension of methods of water purification according to results of surveys and analyses.

(*c*) Stimulation of communities to obtain safe water through national, state and local representatives and volunteer organizations.

5. Milk supplies. National development of safe milk supplies through:

(*a*) Universal pasteurization (including adequate municipal supervision).

(*b*) Adequate inspection of production and distribution of milk and milk products.

(*c*) Stimulation of communities to obtain safe milk through national, state and local representatives and volunteer organizations.

6. Sewage disposal. Proper sewage disposal will control intestinal diseases, such as typhoid fever, dysentery, diarrhea and hookworm. These diseases now cause over 60,000 deaths annually. National development of safe methods through:

(*a*) Extension of water carriage sewerage systems wherever practicable.

(*b*) Elimination within municipal limits of cesspools and privies.

(*c*) In rural communities the installation of sanitary privies.

(*d*) The establishment of minimum standards of permissible pollution of streams, lakes and rivers used for water supplies.

(*e*) Stimulation of communities to obtain safe sewage disposal through national, state and local representatives and volunteer organizations.

7. Malaria. National development of measures for the control of malaria and malaria-bearing mosquitoes in industrially, agriculturally and economically important areas of the United States:

(*a*) By the further dissemination of the knowledge of methods for its control (elimination of malaria-mosquito breeding places through drainage, oiling, ditching, and the like) now being demonstrated by the Public Health Service.

(*b*) By the extension throughout the country of surveys of certain areas as to the prevalence of malaria and malaria-bearing mosquitoes.

(*c*) By increasing the corps of experts of the Public Health Service engaged in malaria prevention and by the utilization of other national agencies wherever practicable to advise the communities as to the methods for best handling their problems in malaria.

(*d*) Additional appropriations for the reclamation of large areas from malaria through proper drainage. Funds for such projects should be supplied on a 50-50 basis by federal and state governments. This plan is especially applicable to the control of malaria in communities where malaria conditions interfere with their economic development.

8. Venereal diseases:

(*a*) Medical measures:

(1) Establishment of clinics, dispensaries and hospitals.

(2) Epidemiologic studies.

(3) Free diagnosis.

(4) Examination for release as noninfective.

(5) Free distribution of arsphenamin.

(6) Control of carriers through detention and commitment.

(*b*) Educational measures:

(1) Proper reporting of cases.

(2) Standardization of pamphlets, exhibits, placards and lectures.

(3) Cooperation with national, state and local authorities, and volunteer associations.

(4) Cooperative work in industrial plants, shipyards and railway employees' organizations.

(5) Cooperation with druggists' organizations to secure their voluntary aid in the control of patent nostrums for the treatment of venereal diseases.

9. Tuberculosis:

(*a*) Stringent provisions for the proper reporting of cases of tuberculosis.

(*b*) Adequate instruction of families and patients, especially in families where there is an advanced case.

(*c*) Hospitalization of cases wherever practicable, either through city institutions or by arrangements with state or district tuberculosis hospitals.

(*d*) Cooperation with national societies and agencies having for their object the prevention of tuberculosis or the improvement of economic conditions.

(*e*) Improvement of industrial conditions predisposing to tuberculosis, such as "dusty occupations."

10. Railway sanitation:

(*a*) Consolidation under supervision of the Public Health Service of railway sanitation.

(*b*) Protection of railway employees by adequate health measures (e. g., protection against smallpox and typhoid fever by vaccination and inoculation; supervision of food, water and milk supplies consumed by employees; elimination of health hazards in shops and other work places; supervision of sanitary housing facilities; sanitation of railway communities).

(*c*) Protection of the public by:

(1) Sanitary supervision of water, milk and food supplies furnished by railway administration.

(2) Sanitary supervision of employees engaged in handling water and food supplies so furnished.

(3) Sanitation of stations, terminals, rights of way, with special reference to sewage disposal, malaria-mosquito eradication, and screening against insect-bearing disease.

(4) Prevention of the spread of communicable diseases through common carriers.

(5) Improvement and regulation of ventilation of passenger coaches and railway tunnels.

11. Municipal sanitation:

(*a*) Development and demonstration of the principle of employing full-time health officers by all municipalities.

(*b*) Enactment and enforcement of ordinances for adequate disease reporting.

(*c*) Provision for safe water, food and milk supplies and sewage disposal.

(*d*) Enactment and enforcement of special regulations for the improvement of conditions causing tuberculosis.

(*e*) Establishment of community health centers.

(*f*) Municipal campaign for the control of venereal diseases through venereal-disease reporting; clinics for the treatment and control of carriers, and free treatment for all cases.

(*g*) Control of malaria and malaria-bearing mosquitoes in malarious regions.

(*h*) Enactment of proper building ordinances and provision for sanitary supervision of housing, especially in industrial centers, including improvements in transportation, so as to permit redistribution of persons living in overcrowded communities.

(*i*) Adequate systems of medical supervision of schools.

(*j*) Reduction of infant mortality by proper organization for prenatal care, bed space in maternity hospitals, and infant-welfare stations, visiting nurses, and milk and ice stations.

(*k*) Stimulation of municipalities to realize their own responsibilities for health, and the part played by adequate health protection in the happiness and material prosperity of the community.

12. Health standards:

(*a*) Communicable diseases. Promulgation by the Public Health Service of minimum standards for the control of communicable diseases.

Note.—The service has published on this subject a report of committee of the American Public Health Association, on which the service was represented. This report should be reviewed and amended by a board of service officers. It should then be formally approved by the conference of state and territorial health officers with the Public Health Service, and be promulgated by the Public Health Service as federal standards.

(*b*) Industrial hygiene. Standards of industrial hygiene and sanitation of places of employment should be prepared by the service in cooperation with the Department of Labor.

(*c*) Sewage and excreta disposal. Minimum standards should be promulgated on the following:

(1) Water-carriage sewerage systems.

(2) Sanitary privies.

(*d*) Standard specifications for safe water and water purification.

(*e*) Community sanitation. Preparation of standard methods for scoring the sanitary condition of communities.

(*f*) Preparation of additional standards for the manufacture and the purity and potency of biologic products and for arsphenamin.

(*g*) Preparation of standards for illuminating, heating and ventilating public buildings and schools.

13. Health education. To increase the knowledge of the general public on means relating to disease prevention and personal hygiene:

(*a*) By the employment of medical sanitarians, having special experience in educational methods and their use, in cooperation with Red Cross national and state organizations, state and municipal health departments, state industrial commissions, and state and national health associations.

Note.—The prevention of the following conditions and diseases will be the special objects of health education: excessive infant mortality, occupational diseases (see section on industrial hygiene), malaria, typhoid fever, hookworm, venereal diseases, pellagra, tuberculosis, pneumonia, cerebrospinal meningitis, and personal hygiene.

(*b*) By advocating and assisting in the securing of full-time state, district and local health officers.

(*c*) By stimulation of states and municipalities to the acceptance of their full responsibility for public health conditions and the support of health activities by adequate appropriations.

(*d*) By the detail of service officers to state health organizations and, when necessary, to city organizations, particularly in communities presenting special health problems.

14. Collection of morbidity reports. Extension of disease reporting to be accomplished through the collection of adequate reports of disease prevalence:

(*a*) By the extension of the present system of collaborating epidemiologists.

(*b*) For the industrial group of the population, through the appointment of industrial surgeons and record clerks in various industrial establishments, such industrial surgeons to be appointed by the Public Health Service, at a nominal salary, so as to place them under the direction and control of the service, and the remainder of the salary to be paid by the industrial establishments to which they are attached. In addition to reporting disease, these surgeons will act as medical and surgical officers and sanitarians. They will also report on community sanitation.

15. Organization and training for duty in emergency of the Reserve of the Public Health Service:

(*a*) By the establishment of training schools in public health work in connection with stations of the Public Health Service and leading universities at which members of the reserve may receive intensive training for short periods at stated intervals.

(*b*) Ordering members of the reserve to active duty to participate in important field work of the Public Health Service.

In order to carry this program into effect the following additional personnel of the Public Health Service is needed:

Industrial hygiene	120
Rural hygiene	200
Prevention of diseases of infancy and childhood	100
Interstate water supplies	20
Milk supplies	15
Malaria:	
Sanitary engineers	20
Epidemiologists	10
Venereal diseases:	
Control in states	88
Control in clinics	240
Tuberculosis investigations	20
Health education	10
Total	843

Medicolegal

Evidence of Illegally Prescribing Liquor

(State v. Raub (Wash.), 173 Pac. R. 1094)

The Supreme Court of Washington, in affirming a conviction of the defendant of having prescribed intoxicating liquor without good reason to believe that the patient was actually sick or that the intoxicant was required for medicine, says that the trial judge permitted the introduction of testimony showing the giving of some fifty-six prescriptions other than those given to the party named in the information, and at about the same time. The defendant had issued to his patient five prescriptions between Aug. 26, 1917, and Sept. 11, 1917, each calling for one quart of whisky. On each prescription the patient was directed to take one ounce of the remedy in water three times a day. As these prescriptions obviously called for a greater quantity of liquor than was necessary to meet the needs of the patient if "taken as directed," the good faith of the physician, the issue in this class of cases, was clearly tendered by the state, and to further sustain the issue the other prescriptions were offered. The rule is that, in cases of this character, such evidence is competent.

It was urged that this procedure was violative of the rule that proof of crimes independent and in no way related to the crime charged cannot be established to prove a specific offense. It would be so if the crime charged rested alone in the doing of the act charged. But the gravamen or material part of the offense is not in the doing of the deed, but in the faith in which it was done. The rule seems to have grown out of the necessities of the statute, for the act itself is presumptively a lawful act sanctioned by statute. It is rendered unlawful when, and only when, the writer of the prescription abuses the confidence that is reposed in him and by the injection of bad faith thwarts the police power of the state. From the nature of things, good or bad faith can be proved only by resort to circumstances and side lights. If it were otherwise—if the mere giving of a prescription or a number of prescriptions by a licensed physician would bar further inquiry—the law would be emasculated of its purpose. It is not going beyond the range of judicial vision to say that liquor has not always been regarded as a cure-all or touchstone of health, but that it has grown in popular favor as a remedy as the chance of procuring it has grown remote;

and, although a physician who prescribes it may be imposed on at times, a general dispensation of the remedy at or about the time charged is sufficient to put him to the defense of his good intention before a jury of his countrymen.

It was complained that no testimony was offered to show the physical condition of the patient, or that she did not in fact need the remedy; the charge being that the defendant prescribed liquor "without good reason to believe that she was at the time actually sick or that said intoxicant was required for medicine." But the court thinks the showing that the defendant had theretofore prescribed 4 quarts of liquor, which would have met the "directions" for a time far beyond the time when the prescription on which the charge was made (September 11) was written, was a sufficient circumstance to go to the jury, and, being unmet in any way, was enough to sustain the verdict.

Duty of Physicians Riding Together in Automobile

(Hurt v. Yazoo & M. V. R. Co.; Lewis v. Same (Tenn.), 205 S. W. R. 437)

The Supreme Court of Tennessee had here two actions which were tried together. One was by Hurt, as administrator, to recover damages for the death of a Dr. Nelson. The other was by a Dr. Lewis to recover damages for personal injuries to himself and for the destruction of an automobile. Dr. Lewis and Dr. Nelson were partners in the practice of medicine. Dr. Nelson had a patient a short distance out of the city, and he and Dr. Lewis visited the patient for the purpose of performing a surgical operation. Dr. Nelson performed the operation, but Dr. Lewis assisted him, and carried him to the patient's residence in his own automobile as a guest and without charge. As they were returning from the operation and Dr. Lewis was giving particular attention to the automobile because the road at a "blind crossing" of the defendant's tracks was in bad repair, both at about the same instant saw a train approaching, and, on account of their closeness to the track, Dr. Lewis deeming it best to try to rush across it, the engine struck the automobile about the rear wheel. The trial judge submitted the cases to a jury, which returned a verdict for $30,000 for Hurt, administrator; and for $2,000 for Dr. Lewis; but the judge afterward directed a verdict for the defendant in each case, stating that he was not satisfied that the plaintiffs were entitled to recover under the law, or that they had sustained their cases by a preponderance of the proof.

The supreme court, in reversing the cases, and remanding them for trial, says it does not think that the defendant's contention was well made that Drs. Lewis and Nelson were guilty of such contributory negligence as would bar their right of recovery as a matter of law. Again, the court says that the two physicians were jointly interested in the success of the operation, and in that sense were on a joint enterprise. The interest they had in the journey would doubtless continue until they had returned to their offices, or until they had declared the journey at an end by act or word. The question of imputable negligence did not really arise in the case. The proof showed that Dr. Nelson saw the train at the same instant Dr. Lewis saw it, and gave the alarm. His negligence, if any, was as great as or greater than that of Dr. Lewis, and therefore there was no basis for the contention that Dr. Lewis' negligence was imputable to Dr. Nelson.

The court thinks Dr. Nelson was under the duty of exercising due care for his own safety, notwithstanding Dr. Lewis was driving the automobile. This would be true whether he was a guest of Dr. Lewis, or whether they were engaged on a joint enterprise in which they were both interested. Dr. Lewis was not a common carrier, and was in the exercise of a friendly act in which he had an interest in transporting Dr. Nelson in his automobile. The guest is under the same duty to look out for his own safety as he would be if traveling alone. He cannot close his eyes to obvious danger and rely exclusively on the driver of the automobile to protect him. It is a question of ordinary care and proximate cause. The facts that the plaintiffs were riding in an automobile, and that Dr. Lewis was the guest of Dr. Nelson, could not change their duty to exercise due care for their own safety. This duty was personal to each one.

Care Required of Hospital Conducted for Profit

(Tulsa Hospital Association v. Juby (Okla.), 175 Pac. R. 519)

The Supreme Court of Oklahoma, in affirming a judgment for damages against the defendant association, holds that a hospital that is conducted for private gain receives patients under an implied obligation that it will exercise ordinary care and attention for their safety, and such degree of care and attention should be in proportion to the physical and mental ailments of the patient; and the question whether or not such requirements have been met presents an issue of fact to be determined by the jury. In this case the plaintiff, who had been taken to the defendant's hospital for the purpose of being operated on for appendicitis, maintained that a subsequent attack of pneumonia was due to the bedding on her bed and to her nightgown being wet by a leaking roof, and, for two hours, only the blankets being changed. The court says that it is unable to agree with the contention that there was not shown that degree of negligence on the part of the defendant in permitting water to leak through its roof as would entitle the plaintiff to recover damages for injury sustained thereby. The plaintiff was received into the hospital with an implied understanding and agreement that she would be furnished with a suitable room for a person in her condition. It was incumbent on the defendant to exercise ordinary care in furnishing the plaintiff a suitable and safe place, and to use ordinary care in furnishing the plaintiff a competent nurse, and to use ordinary care in looking after and caring for the plaintiff while she was in its care and custody. These questions presented an issue of fact which was rightly submitted to the jury for determination. From a careful reading of the record the court is convinced that, if the verdict had been based solely on the negligence of the defendant in permitting the plaintiff to remain in her bed for a period of two hours after ascertaining that the roof was leaking and the bed was wet, a verdict on that issue alone would be warranted by the evidence. Furthermore, it appeared that when the plaintiff was placed in the care and custody of the defendant, and was paying the ordinary prices charged by such institution, the defendant did not place a skilled and trained nurse over the plaintiff, but, on the contrary, placed a pupil nurse in the institution, whose training did not cover more than a period of six months, in charge of her, and if the evidence of the plaintiff was to be believed, this pupil nurse permitted her to lie on this wet bed for a period of more than two hours before any effort was made to change her clothes or the sheets on the bed. If this state of facts be true, this conduct alone would constitute such negligence that a cause of action might be predicated thereon, and a judgment recovered. A rehearing was denied.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

Alabama State Medical Association, Mobile, April 15.
American Association of Anatomists, Pittsburgh, April 17-19.
American Physiological Society, Baltimore, April 24-26.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, N. Y., June 5.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Georgia State Medical Association, Atlanta, April 17.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Louisiana State Medical Society, Shreveport, April 8-10.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
North Carolina State Medical Society, Pinehurst, April 15.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
South Carolina Medical Association, Florence, April 15-16.
Texas State Medical Association, Waco, May 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1919, **152**, No. 3

- *Cutaneous Aspects of Tuberculosis: II. Diagnostic and Clinical Relations of Certain Tuberculosis. J. H. Stokes, Rochester, Minn.—p. 313.
- *Case of Acute Bichlorid of Mercury Poisoning Treated Successfully by Newer Methods. J. Rosenbloom, Pittsburgh.—p. 348.
- Case of Bulimia; Causal Treatment of Some Functional Diseases. G. Dock, St. Louis.—p. 356.
- *Migraine. M. P. S. Rupert and E. E. Wilson, Philadelphia.—p. 361.
- Two Cases of Gaucher's Disease in Adults. F. S. Mandlebaum, New York City.—p. 366.
- Standardization of Methods in Cases of Prostatic Obstruction. W. C. Quinby, Boston.—p. 390.
- *Nervous Symptoms in Pernicious Anemia. H. W. Woltmann, Rochester, Minn.—p. 400.
- Sensitization and Treatment of Bronchial Asthmatics with Pollens. I. C: Walker, Boston.—p. 409.

Cutaneous Aspects of Tuberculosis.—The material used in Stokes' study consisted of thirty cases of the so-called papulonecrotic tuberculid of erythema induratum, and of associated conditions constituting, according to the most widely accepted explanation, the allergic response of a hypersensitized skin to emboli of tubercle bacilli from a tuberculous focus elsewhere in the body. Association with tuberculosis in this series was evidenced by a family history in one fourth of the cases, incontestible objective signs in more than half (57 per cent.), and presumptive signs of the disease in 70 per cent. One third of the patients had roentgenographic signs of pulmonary tuberculosis; an equal number had suggestive or positive physical signs of lung involvement. The importance of lymphatic involvement is illustrated by the fact that two-thirds of them had a tuberculous lymphadenitis.

The type and location of the focus of tuberculosis do not seem to influence the tuberculid beyond the marked association with glandular involvement. On the other hand, the influence of vascular abnormalities and chronic passive congestion in the extremities is very apparent. Ninety-six per cent. of the lesions involved the extremities. Lesions appeared in the ear in 13 per cent. Slight fever at onset, loss of weight in 40 per cent., amenorrhea in 43 per cent. of the women, moderate leukopenia, slight but occasionally severe anemia, and vernal periodicity are the significant signs. An onset and course marked by rheumatic symptoms is very common (46 per cent.) and often misinterpreted. The recognition of the focus of tuberculosis must depend largely on objective evidence. There is a notable absence of cough, sweats and hemoptysis. Florid, seemingly robust types of patients are not infrequently subjects of tuberculids.

Evidence of the importance of a septic focus and collateral types of infections appears from the history of tonsillitis in 39 per cent., "rheumatism" in 46 per cent., pneumonia in 26 per cent., grip in 54 per cent., and pleurisy in 18 per cent. These conditions seemed frequently to stand in direct predisposing or exciting relation to the tuberculid. A total of 70 per cent. had symptoms and findings suggesting the presence of a septic focus, and 62 per cent. had had significant respiratory infections excluding pleurisy. While no direct relation of the tuberculid to the clinical condition of the tonsils could be established, 50 per cent. of the patients had markedly septic tonsils, the remainder were passable and none were normal. Examination of the teeth by roentgen ray in a limited number of the latter cases demonstrated the presence of septic foci in 45 per cent. of nine patients. Removal of the tonsils in seven cases failed to prevent the outbreak of a tuberculid or modify its course, and complete extirpation of all recognizable septic foci in two cases, without removing or treating the tuberculous focus, was also unavailing.

Treatment of Bichlorid of Mercury Poisoning.—The treatment advocated by Rosenbloom is as follows: Administer the whites of three eggs beaten up in a quart of milk and then empty the stomach by siphonage. Give 300 c.c. of fresh calcium sulphid solution, containing 1 grain to 1 ounce of water by mouth. Wash out the stomach with fresh calcium sulphid solution, 1 grain to 1 ounce of water. Administer in powder or tablet 0.36 gm. of sodium phosphite and 0.24 gm. of sodium acetate. If this is not available give the following: Sodium hypophosphite, 1 gm.; water, 10 mils; hydrogen peroxid, 5 mils. Use ten times as much of the hypophosphite as poison taken. Give a copious lavage of the stomach with the above antidote diluted twenty times. Give the above undiluted antidote every eight hours for two days. Pour through the stomach tube after the above lavage a solution of 3 ounces of sodium sulphate and 6 ounces of water containing 5 grains of calcium sulphid. Let these solutions remain in the stomach. Give intravenously after withdrawing 600 c.c. of blood, 800 c.c. of Fisher's solution or bicarbonate-glucose solution. Wash out the stomach morning and night, giving by the mouth after each washing, 5 grains of calcium sulphid dissolved in 3 ounces of water. Continue this lavage until the stomach washings are free from mercury when tested by Elliott's method and until the urine is free from mercury. Give high colon irrigations of warm water morning and night, using 8 gallons of water for each treatment. Give a hot pack twice daily. Give 8 ounces of milk every second hour. Give every second hour 8 ounces of the following solution, by mouth, alternating with the milk: Potassium bitartrate, sodium citrate and sucrose, each 1 dram; lactose, 4 drams; lemon juice, 1 ounce, and boiled water, 16 ounces. Force the patient to drink large quantities of alkaline waters. Give a low fat and low protein and high carbohydrate diet for four weeks. Avoid salt food, as it increases the absorption of the mercury. Give by continuous proctoclysis a solution containing 1 dram potassium acetate, 4 drams glucose and 3 drams sodium bicarbonate to the pint. Keep the urine alkaline. Continue treatment until recovery, usually a period of three weeks.

Migraine.—Rupert and Wilson found on examination that each person having frequent attacks of migraine shows some abnormality of the stool, usually putrefaction, with an alternation of blood-pressure, and these are usually accompanied by delay of kidney function with some disturbance of nitrogen output. Further, this variation of blood-pressure between attacks corresponds with the findings in the stool. For instance, a persistently low blood-pressure reading is apt to be associated with an excessively putrefactive movement, and as the stool condition is corrected, the attacks are less in frequency and in severity, and some cases show improvement in pressure between attacks. The authors are searching for toxin in the putrefactive stool.

Nervous Symptoms in Pernicious Anemia.—Of the 150 patients examined by Woltmann, no less than 80.6 per cent. presented indisputable evidence of the destruction of nervous parenchyma. Approximately 12.7 per cent. of the patients came for the express purpose of seeking relief from symptoms directly attributable to involvement of the nervous system. Chief among these were the paresthesias, especially numbness and tingling of the hands and feet, which were present in about 80 per cent. of all cases, regardless of whether or not involvement of the nervous system could be demonstrated objectively. Occasionally a patient complains of a girdle pain (2.8 per cent.), or the sensation of a tight band drawn around the knees (1.7 per cent.). A number presented themselves for examination because of inability to control the arms and legs properly. In the motor field, cramping of the calves occasionally proved to be the source of great discomfort.

In relation to the cranial nerves, dimunition in the sense of smell, taste and hearing was noted. In 1.4 per cent. of the cases the appearance of nervous symptoms antedated the onset of the anemia, the symptoms that preceded being usually the paresthesias. The duration of the anemia also showed no definite relationship to the time of onset in the nervous symptoms, though in the cases examined the mean duration of the anemia was 2.2 years and the mean onset of the nervous symptoms ten and a half months later. The type of lesion *par excellence* of the nervous system, as evidenced clinically, is a subacute combined degeneration of the cord, regardless of whether this begins in the posterior or the lateral columns or in both simultaneously, though the columns of Gall and Burdock are in the majority of cases first and most extensively involved. Multiple neuritis could be demonstrated in addition to the spinal cord lesion in 4.9 per cent. of the cases.

Annals of Otology, Rhinology and Laryngology, St Louis

December, 1918, **27**, No. 4

Multiple Osteoma of Nasal Accessory Sinuses; Case Complicated by Syphilis; Operation; Necropsy. W. L. Culbert, New York City. —p. 1203.

Case of Plastic Repair of Ala of Nose by Means of Doubly Epithelialized Flap from Face. R. H. Ivy, Washington.—p. 1225.

Original Methods of Treatment of Laryngeal Stenosis. S. Iglauer, Cincinnati.—p. 1233.

Case of Osteoma of Frontal Sinus of Large Size: Operation; Recovery. J. F. Barnhill, Indianapolis.—p. 1239.

Case of Meningitis Following Operation on Middle Turbinate; Old Perforation of Cribriform Plate of Ethmoid. T. J. Harris, New York City.—p. 1241.

Treatment of Progressive Deafness Following Chronic Hyperplastic Otitis Media. F. P. Emerson, Boston.—p. 1250.

Esophageal Obstruction Due to Accessory Thyroid. F. E. Hopkins, Springfield, Mass.—p. 1258.

Local Anesthesia in Mastoid Operations. H. B. Orton, M. C.—p. 1261.

Diseased Faucial Tonsils: Their Toxic, Infectious, and Reflex Effects. J. L. Davis, Philadelphia.—p. 1265.

Rhinoplasty. E. J. Moure, Bordeaux, France.—p. 1273.

Wounds of Face and Maxillary Bones. E. J. Moure, Bordeaux. —p. 1282.

Treatment of Most Common Mutilations of Nasal Tip Structures (Auvent Nasal), Caused by War Traumatism. H. Caboche, France. —p. 1298.

Rhinoplasty and Nasal Prosthesis. Pont, France.—p. 1320.

Absolute Repose of Jaws as Treatment for Traumatic Parotid Salivary Fistulae. P. Pietri, Kiew.—p. 1333.

Local Anesthesia: Technic in Surgical Interventions on Frontal and Maxillary Sinuses. G. Canuyt, Bordeaux, and J. Rozier, Pau.—p. 1348.

Salivary Fistulae. L. Dieulafé, France.—p. 1372.

Archives of Internal Medicine, Chicago

March 15, 1919, **23**, No. 3

*Standardization of Antipneumococcus and Antimeningococcus Serums. A. B. Wadsworth, M. B. Kirkbride and R. Gilbert, Albany, N. Y. —p. 269.

*Clinical Study of Meningitis Based on Two Hundred and Fifteen Cases. W. J. Stone, Toledo, and R. C. P. Truitt, Baltimore.—p. 282.

*Plasmaphaeresis in Treatment of Chronic Nephritis and Uremia. J. P. O'Hare, H. H. Brittingham, and C. K. Drinker, Boston.—p. 304.

*Poliomyelitis, Clinically Atypical Because of Complicating Infection by Proteus-Like Bacillus. O. T. Schultz, Chicago, and A. M. Dannenberg, Philadelphia.—p. 309.

*Relative Frequency in Recruits With and Without Thyroid Enlargement of Certain Signs and Symptoms which Occur in Neurocirculatory Asthenia. T. Addis, and W. J. Kerr, San Francisco.—p. 316.

*Chemistry of Pernicious Anemia. M. Kahn, and J. Parsky, New York City.—p. 334.

Toxin Formation by Variety of B. Botulinus When Cultivated Aerobically Under Various Conditions. L. P. Shippen, Washington, D. C. —p. 346.

*Mechanism of Protective Action of Carbohydrate Diet in Phosphorus and Chloroform Poisoning, J. P. Simonds, Chicago.—p. 362.

*Experiences with Recent Epidemic of Meningococcic Meningitis Among Chinese Civil Population. P. K. Olitsky, New York City.—p. 380.

*Biochemical Studies of Pneumonic Exudates: Mechanism of Crisis in Pneumonia. C. Weiss, Philadelphia.—p. 395.

Standardization of Antipneumococcus and Antimeningococcus Serums.—The results of tests made on antimeningococcus serums produced by different laboratories, and the experience in formulating standard methods for the state are recorded by Wadsworth and his associates as the outcome of this work. Rules and regulations for the testing of the potency of antimeningococcus serum were drawn up. They bear on (1) the type of serum, (2) minimum standard of potency, (3) standard cultures, (4) standard suspensions, (5) method of testing the potency of the serum, (6) physical properties, (7) sterility tests, and (8) expiration date.

Clinical Study of Meningitis.—The important diagnostic features presented by a series of 191 patients with meningococcic meningitis and twenty-four patients with meningitis due to other organisms are analyzed by Stone and Truitt. In 191 cases the mortality was 28.8 per cent. Mixed infection occurred in thirteen instances with a mortality of 92.3 per cent. Meningitis due to other infection than meningococcus occurred in eleven instances with a mortality of 81.8 per cent. Ten out of 191 patients with meningococcus, or 5 per cent., gave a history of an earlier carrier state. Of these ten patients, eight recovered and two died. A definite history of earlier meningitis was given by two patients, one of whom recovered while the other resulted fatally.

Lumbar puncture was performed for diagnostic purposes as early as possible on all meningitis suspects. The usual amount of serum given intraspinally was from 30 to 35 c.c. twice daily during the first five or six days until the reports received from the laboratory showed two or more negative examinations. The average number of intraspinal treatments in 136 recovered patients was eleven; the average total amount of serum received by each was 305 c.c.; the average total drainage of spinal fluid was 571 c.c.

Combined intravenous and intraspinal therapy was resorted to in thirty-two patients. The mortality was 28.1 per cent. Three of the patients died within sixty hours after admission. In one of the fatal cases the patient received 730 c.c. of serum intravenously in eighteen injections, and 460 c.c. of serum intraspinally in twenty injections; in two other fatal cases the patients received 200 and 360 c.c., respectively, by vein and 1,080 and 1,015 c.c., respectively into the spinal canal. The mortality in this series of patients was almost identical with the mortality among 159 patients with meningococcic meningitis treated intraspinally (deaths, forty-six; mortality, 28.9 per cent.).

The point is made by the authors that in a patient still manifesting evidences of the disease, such as positive organisms or fever, in whom mechanically it becomes difficult to continue treatment by spine, the attempt should be made to give serum by vein. If patients have been given a number of intraspinal treatments and subsequently an intravenous injection is contemplated, extreme care in its administration is necessary to avoid serious symptoms of anaphylaxis. It has always proved wise to desensitize before giving the first intravenous injection, by a subcutaneous injection of 1 c.c. of serum. The intravenous injection should be given slowly, at the rate of 1 c.c. of warmed serum per minute for the first 10 or 15 c.c. . If anaphylactic symptoms occur the injection should be stopped and the attempt repeated later. Epinephrin chlorid, 1 c.c. of the 1:1,000 solution, by hypodermic injection, relieves the symptoms of anaphylaxis. Atropin, 1/100 grain, by hypodermic injection is also useful. The serum if mixed, not shaken, with an equal volume of salt solution is less apt to clog the needle.

Plasmaphaeresis in Treatment of Nephritis and Uremia.—Bleeding, removing the plasma and returning the corpuscles after washing with Locke's solution is designated "plasmaphaeresis." In the course of experiments designed by O'Hare and others to disclose the toxic elements in citrated blood transfusions it became expedient to obtain data on removal and return of corpuscles from the same individual. In consequence of this need, the ordinary venesections in uremia patients, which would have been carried through without return of corpuscles, were made instances of plasmaphaeresis, and data were obtained on the possible beneficial effects of this measure. The blood was drawn into sodium citrate, centrifugalized and prepared for return; in no case was sodium citrate added before reinjection, nor was Ringer's solution employed. Seven or eight hundred c.c. of blood were withdrawn, centrifugalized, washed twice with freshly made, sterile, 0.85 per cent. sodium chlorid solution, and the corpuscles were returned made up to the original volume with salt solution. On completing this return, and without inserting another needle, 700 or 800 c.c. of blood were again withdrawn. The corpuscles thus removed were washed twice and reinjected. The patient never experienced a hemorrhage of more than 800 c.c., and he was subjected to no operation except venipuncture, as it should never be necessary to cut down on a vein in such cases.

So far as this procedure was carried out in the one case reported it did not arrest the march of uremia in any degree. The encouraging betterment noted early in the patient's stay in the hospital was no more than is often seen from rest and proper diet. Other patients on whom the maneuver was used have been of similar type and have received no benefit from it or from blood transfusion. Plasmaphaeresis was carried out eighteen times in eight different cases of chronic nephritis and uremia without definite benefit to the patients. It is suggested that the maneuver can have clinical value in no cases save those of acute suppression of urine where it is a question of tiding over a brief period.

Atypical Poliomyelitis.—A case of poliomyelitis, contracted by a soldier in civil life before his departure for camp, is described by Schultz and Dannenberg. The earlier clinical course was that of an acute poliomyelitis involving the lumbar region cord. Xanthochromia and spontaneous coagulation of the spinal fluid were present, due to an old subdural hemorrhage which was the result of an injury three months before admission. The later course was complicated by infection of the urinary tract and by generalized infection, the result of paralysis of the bladder caused by the poliomyelitis. The organism which caused the secondary infection, while not a typical *B. proteus,* is apparently a member of the proteus group.

Thyroid Enlargement and Neurocirculatory Asthenia.—The object of the survey made by Addis and Kerr was to find whether those signs and symptoms which occur in neurocirculatory asthenia, and which may also be present in toxic goiter, were more commonly seen in recruits with thyroid enlargement than in those who had no thyroid enlargement. The findings were negative.

Chemistry of Pernicious Anemia.—A study of the chemistry of three cases of pernicious anemia is presented by Kahn and Barsky. The blood analysis showed a lessened specific gravity of the serum, reduction of the protein content, and increase in the ash and lime content, and a normal fat, cholesterol and glucose percentage. There was complete anacidity present in the stomach, an increased residuum, and absence of pepsin, resembling the gastric picture present in cases of carcinoma ventriculi. The Wolff-Junghans test was negative. Intestinal digestion was disturbed. The fecal bulk was much increased, and the nitrogen lost in the feces was above normal in amount. The fat in the feces was normal. Intestinal putrefaction, as evidenced by increased ethereal sulphate output, was present. There was a state of suboxidation—the neutral sulphur fraction was increased. The pancreas functionated normally, as evidenced by enzyme examination of duodenal contents and feces. There was a deficiency in the hepatic detoxication function as shown by the sulphoconjugation test. The glycogenic and ureogenic functions of the liver were normal. The excessive hemolysis of pernicious anemia was attended by both a pleochromia and urobilinocholia. In this regard Schneider's experiments are corroborated. There was an increased elimination of oxyproteic acid nitrogen in the urine in cases of pernicious anemia; the other urinary nitrogen fractions being normal. The renal function was normal, as evidenced by the phenolsulphonephthalein test and the blood nitrogen partition. The creatinin in the blood was increased. Acidosis was present in the cases examined, as determined by the carbon dioxid combining power of the blood plasma, the H ion concentration of the blood, and the carbon dioxid of the alveolar air.

Use of Sugar in Phosphorus and Chloroform Poisoning.—The facts presented by Simonds are, he believes, sufficiently well substantiated to justify the opinion that the administration of sugar will prove to be an important therapeutic measure in phosphorus and chloroform poisoning in humans, in acute yellow atrophy of the liver, and, possibly, in eclampsia.

Meningococcic Meningitis.—In four of ten moribund cases of epidemic meningitis seen by Olitsky, the meningococcus was found circulating in the blood. This finding, he believes, emphasizes the need of intravenous combined with intraspinal methods of treatment. Serums having a low agglutinin content were therapeutically ineffective. About 95 per cent. of the patients were infected with one type, the parameningococcus; the remainder with the irregular para type. In a series of prisoners, who lived under hygienic conditions, 24.6 per cent. were found to be carriers. Of these, 50 per cent. yielded irregular or inagglutinable types and 34.3 per cent. the normal type, and only one person the para type. Although the jail is within the epidemic area, not a single case of meningitis developed therein. These and other facts already stated have led to the conclusion that dense overcrowding of population and the presence of a pathogenic type of meningococcus, rather than the actual numbers of healthy carriers of various types of the organism, are the causes of the great spread of this epidemic.

Analysis of Pneumonic Exudates.—Biochemical studies of pneumonic exudates obtained from human lungs in the stage of gray hepatization were conducted by Weiss by the method of anaphylactic sensitization and intoxication of guinea-pigs with various proteins derived from normal and pneumonic lungs, exudates, serums, etc. The following observations were made: Pneumonic exudates, contain at least two toxic proteins: (1) a specific sensitizing protein apparently identical with the pneumotoxin which is liberated on the dissolution of virulent pneumococci, and (2) an extremely toxic, pyrogenic albumose. There are also present normal serum proteins: serum albumin and serum globulin, leukocytes and fibrin. Neither undigested pneumococcic protein nor albumin derived from the lung tissue, possessing sensitizing powers, are demonstrable. The globulin fraction of human pneumonic exudate is nontoxic and identical with similar normal globulin. The albumin fraction of pneumonic exudate is toxic and possesses marked specificity. This is ascribed to the digestive action of the enzymes of the exudate. The albumose fraction is far more toxic. Dyspnea, convulsions and death follow the intraperitoneal injection into white rats of doses of one 1 gm. per kilogram. Intrathoracic injection into rabbits of doses of 0.02 gm. per kilogram produces a rise in temperature, dyspnea, a hemorrhagic extravasation into the alveoli of the lung and an acute diffuse nephritis. On repeated intraperitoneal injections of this albumose into rats, a tolerance to it can be established. Large amounts of ether-soluble, nontoxic, hemolysis-inhibiting substances were extracted from pneumonic lungs. These are assumed to have the power of neutralizing the hemolytic activity of the pneumotoxin in vivo.

The formation of the exudate in pneumonia is considered by Weiss to be in part due to an increased permeability of the endothelial cells of the lung for various normal serum albumins, globulins, fibrinogen and enzymes as the result of the injury exerted by the pneumotoxin on their cement substance. The toxin is also regarded as a lymphagogue. It hinders the autolysis of the exudate and the favorable action of antipneumococcus immune bodies and thus produces toxic autolysis inhibiting, pyrogenic albumoses. With the development of excess amounts of specific antibodies, of bactericidal and phagocytic substances, and of a tolerance to the toxic albumoses, the deleterious influences of the toxins and albumoses are neutralized. Autolysis of influences of the toxin is now unhindered and the products are nontoxic aminoacids. The equilibrium of this system being governed by the laws of mass action, the change from febrile toxemia to the afebrile atoxic state is necessarily an abrupt one—crisis.

Boston Medical and Surgical Journal

March 20, 1919, **180**, No. 12

- *Influenza Epidemic at Camp MacArthur. L. S. Medalia, Boston. —p. 323.
- Pneumonia and Empyema. H. Gray, Camp Devens, Mass. To be continued.—p. 330.
- *Unique Case of Foreign Bodies in Stomach. A. C. Callister, Boston. —p. 334.
- Infantile Scurvy. J. Comby, Paris, France.—p. 336.

Influenza at Camp MacArthur.—In the epidemic in this camp the influenza bacillus was found to be the predominating organism. Out of 2,279 sputums examined by Medalia and others, 76.8 per cent. were found positive to this organism. The pneumococcus was the most important associated organism, being found in 53 per cent. of the total sputums examined. The examination of contacts for influenza carriers as a means of prev[illegible]n, though possible, was found impracticable. The ty[illegible] [illegible]ination [illegible] 440 cases of influenzal pneumonia conf[illegible] the fol[illegible]: T[illegible] 0.23 per cent.; Type IIa, 3.4 p[illegible]; Type I[illegible]; Type [illegible], 1.1

per cent., and Type IV, 85.8 per cent.; undetermined, being bile insoluble, 8.6 per cent. The *B. influenzae* was found in 54 per cent. of the bronchopneumonia sputums that were typed. Blood cultures made in 233 cases showed thirty-four, or 14.6 per cent., positive. Thirty-one of the thirty-four positive, or 94 per cent., were found to be pneumococcus. *B. influenzae* was found in two cases, or 5.8 per cent. (one mixed with pneumococcus). The high percentage of positive *B. influenzae* found in the bronchopneumonia cases that came to necropsy, in the lungs, pleural cavities, the heart, and spleen culturally, and in the stained tissue of the lungs and spleen, is accepted by Medalia as being further evidence of the causative relation of *B. influenzae* to the bronchopneumonia, and as demonstrating the frequency of the organism in the circulation. The sixty-one consecutive necropsies showed 92 per cent. to be bronchopneumonia; 8 per cent. lobar. Empyema (bloody serofibrinopurulent) was a constant finding, being present in over 75 per cent. of the cases.

Foreign Bodies in Stomach.—One hundred and forty-one foreign bodies were "fished" out of the stomach in Callister's case, including 128 sections of bed spring, measuring 8 cm. in length and 1 cm. in diameter on either end, nine copper pennies, three peach pits, and a piece of tin foil, the total weighing 2½ pounds.

Bulletin of Johns Hopkins Hospital, Baltimore

March, 1919, **30**, No. 3371.

Antituberculosis Measures. A. K. Krause.—p. 49.
*Insusceptibility of Monkeys to Inoculation with Blood from Measles Patients. A. W. Sellards and J. A. Wentworth, Camp Devens, Mass.—p. 57.
*Production of Tetany by Intravenous Infusion of Sodium Bicarbonate: Report of Adult Case. G. A. Harrop, Baltimore.—p. 62.
*Changes in Blood Immediately Following Transfusion. J. G. Huck, Baltimore.—p. 63.
Elizabeth Fry—Quaker Reformer. H. M. Thomas, Baltimore.—p. 72.

Insusceptibility of Monkeys to Inoculation from Measles Patients.—Three monkeys were inoculated by Sellards and Wentworth with the blood of measles patients taken early in the course of the disease from moderately severe cases. These animals remained entirely free from any symptoms that were either diagnostic or even suggestive of measles. Two of these animals that were injected a second time failed to develop any symptoms. After an incubation period of eleven days blood was taken from one of these monkeys and injected into a human volunteer. No symptoms developed.

Production of Tetany by Intravenous Infusion of Sodium Bicarbonate.—A woman swallowed bichlorid of mercury with suicidal intent. Because of reduction in plasma carbonate capacity she was given 500 c.c. of a 5 per cent. sodium bicarbonate solution intravenously. No untoward effect was noted and she said that she felt more comfortable afterward. Twenty-four hours later, another intravenous infusion was given of 700 c.c. of a 5 per cent. solution of sodium bicarbonate, prepared as before. This made in all 60 grams of sodium bicarbonate given intravenously. A small amount given by mouth had not been retained. About five minutes after this last infusion, which had been given slowly and had been apparently well taken, the patient's face suddenly grew pale, she commenced to have great inspiratory difficulty, and became very apprehensive. She complained of numbness and tingling of the fingers, and begged to have them rubbed. The hands assumed the typical obstetrical position, there was pedal spasm, and a first degree facial phenomenon (Chvostek's sign) was obtained. The pulse was accelerated to about 130, and the extremities became cold. There was no elevation of the blood pressure. The acute attack lasted for about fifteen minutes, after which the breathing became easier and she was less apprehensive. The *main d'accoucheur* position was maintained for about two hours. The following day the plasma bicarbonate capacity was eighty volumes per cent. On this day a second degree Chvostek's sign was obtained and Trousseau's phenomenon was easily elicited. Trousseau's phenomenon was present for four days and Chvostek's sign until the night of the seventh day, when the patient died.

Changes in Blood Immediately Following Transfusion.—Following the injection of blood, Huck found an immediate increase in the red cell count, the striking point being the marked increase in many cases apparently out of proportion to the quantity of blood introduced. In one case, the red count rose from 880,000 to 1,488,000 immediately after the injection of 500 c.c.; and in another case from 480,000 to 1,300,000, following the injection of 650 c.c. Such remarkable changes, Huck believes, apparently indicate a rapid redistribution of blood following an injection. In some cases the initial increase continued for several hours, usually falling, so that at the end of twenty-four hours the count had fallen to approximately where it was before the transfusion. In other cases, however, there was a marked increase at the end of twenty-four hours. In several instances, after injection of blood, the count fell for a few hours and then rose slightly. The hemoglobin in most cases showed a uniform rise following transfusion, usually reaching its maximum at the end of twenty-four hours. In some cases the hemoglobin fell slightly after the initial rise. Changes in hemoglobin did not run parallel with changes in the red count, as shown by the variations in the color indexes.

In practically every case following transfusion there was some increase in leukocytes. In several instances, however, they remained practically stationary or even fell. The most striking change in the differential count is the increase in the polymorphonuclear neutrophils. Occasionally, a neutrophilic myelocyte was seen following transfusion. In these cases no outpouring of nucleated red cells occurred, although in four instances a few were seen following transfusion, but not before. The numbers are so small, however, that this may have been accidental. A general review of the immediate effect of transfusion on the blood count in twenty cases does not reveal any constant changes following this procedure. The point of practical interest and importance seems to be that no exact mechanical effect can be demonstrated following the introduction of definite quantities of blood. Whereas, in a general way, it may be said that the introduction of blood raises the count, the effect is essentially a biologic one involving the redistribution of blood in the body, and its exact nature is not at present understood.

Bulletin of Lying-In Hospital of City of New York

March, 1918, **11**, No. 4

*Open Air Treatment in Anemia Due to Repeated Hemorrhage. J. W. Markoe, New York City.—p. 209.
*Toxemias of Pregnancy and Their Treatment. A. B. Davis, New York City.—p. 212.
Conservative Treatment of Eclampsia. R. McPherson, New York City.—p. 225.
Cesarean Scar: An Anatomic Study. J. R. Losee, New York City.—p. 228.
Case of Antepartum Mammary Hyperemia Due to Unrecognized Malignant Disease. G. W. Kosmak, New York City.—p. 241.
Birth Dislocations of Cartilaginous Epiphyses. E. D. Truesdell, New York City.—p. 245.
Causes of Death in Childbirth; Maternal Mortalities in 100,000 Confinements at New York Lying-in Hospital. J. A. Harrar, New York City.—p. 257.

Open Air Treatment in Anemia.—In cases of severe hemorrhage from any cause other than the blood diseases, when the bleeding is controlled before a fatal amount has been lost, Markoe has adopted the open air treatment, placing the patient directly out of doors, or, where that is impossible, he has moved her into the room containing the greatest cubic air space and the largest number of windows. Markoe also follows this procedure in many forms of septic infection in which efforts to build up the resistance of the patients seems unavailing until they are placed in the open air with proper surroundings.

Toxemias of Pregnancy.—The treatment of the preeclamptic state employed by Davis consists of milk diet, 2 to 3 quarts of milk in twenty-four hours; a hot bath daily, colonic irrigation with bicarbonate of soda solution, and a saline cathartic, preferably magnesium sulphate. Bicarbonate of soda given by mouth will reduce or entirely cure the heartburn and acid indigestion. This course is followed for a week or ten days. As improvement appears the patient is allowed out of bed part of the day. Gradually cereals, eggs and nonnitrogenous foods are added to the diet. The daily hot bath, mild saline catharsis, milk and cereal diet and bicarbonate of soda are continued. The treatment of the eclamptic state: stomach lavage with bicarbonate of soda solution, followed by 2 ounces of magnesium sulphate. The colon is irrigated, employing from 4 to 5 gallons of normal salt, glucose or soda solution. Davis prefers soda solution. The essential thing is the large quantity of fluid introduced which clears the colon and by absorption flushes the kidneys, in this way proving to be the best diuretic. Stimulate all the emunctories; dilute and remove as much toxic material as possible. Very little internal medication is used. Chloral hydrate, sodium bromid, and morphin usually comprise the list. In operative deliveries, ether is used as a rule, chloroform never, rarely gas and oxygen. If the condition of the patient demands it, immediate delivery is done.

Canadian Medical Association Journal, Toronto

March, 1919, 9, No. 3

Early Stages of Trench Nephritis. G. S. Strahy, C. A. M. C.—p. 193.
Economic Effects of Disablements. J. L. Biggar, R. O.—p. 201.
*Rôle of Thymus in Exophthalmic Goiter. N. B. Eddy, Montreal.—p. 203.
Man's Place in Nature. J. Third, Kingston, Ont.—p. 213.
Return of Army Medical Officer. E. J. Williams, C. A. M. C.—p. 221.
Prostatic Massage. W. T. Lockhart, C. A M. C.—p. 223.
Influenza and Vaccination. J. J. Heagerty, Grosse Isle.—p. 226.
Tuberculosis as Causative Factor in Disordered Action of Heart. H. R. MacIntyre, C. A .M .C.—p. 229.
Use of Roentgen Rays in Gastro-Intestinal Diagnosis. H. H. Cheney, Montreal.—p. 238.
Hospital Treatment of Summer Diarrhea. L. M. Lindsay, Montreal.—p. 243.
Hypernephroma and Renal Cancers: Five Cases. C. T. Crowdy, Montreal.—p. 246.
Case of Congenital Bilateral Anophthalmos. J. Rosenbaum, Montreal.—p. 255.

Rôle of Thymus in Exophthalmic Goiter.—In an attempt to determine whether an excess of the product of thymus activity in the circulating blood could cause exophthalmic goiter or not, experiments were made by Eddy on rabbits. Two rabbits served as a control. Three rabbits were given hypodermic injections of thymus substance in the proportion of 5 mgm. per kilogram of body weight, and three in the proportion of 10 mgm. per kilogram. Forty injections were given to each rabbit. There was no evidence of the production of symptoms characteristic of exophthalmic goiter by the thymus gland substance employed in either group of rabbits.

Journal of Biological Chemistry, Baltimore

March, 1919, 37, No. 3

*Effect of Acetone and of β-Hydroxylbutyric and Acetoacetic Acids On Blood Catalase. W. E. Burge, Urbana, Ill.—p. 343.
Lactose, Fat and Protein in Milk of Various Animals. O. Folin, W. Denis, and A. S. Minot, Boston.—p. 349.
Methods for Quantitative Determination of Non-Protein Nitrogenous Constituents of Milk. W. Denis and A. S. Minot, Boston.—p 353.
Determination of Distribution of Nitrogen in Certain Seeds. J. F. Brewster and C. L. Alsberg, Washington.—p. 367.
Reduction of Quantity of Humin Nitrogen Formed in Hydrolysis of Nitrogenous Constituents of Feedingstuffs. H. C. Eckstein and H. S. Grindley, Urbana, Ill.—p. 373.
Experimental Studies on Growth: X. Late Growth and Senescence of Normal White Mouse, and Progressive Alteration of Normal Growth Curve Due to Inbreeding. T. B. Robertson and L. A. Ray, Toronto.—p. 377.
Id. XI. Growth and Senescence of White Mice Fed on Pituitary (Anterior Lobe) Tissue, Tethelin, Egg Lecithin, or Cholesterol.—p. 393.
Id. XII. Influence of Pituitary Gland (Anterior Lobe) Tissue, Tethelin, Egg Lecithin, and Cholesterol on Duration of Life of White Mouse.—p. 427.
Id. XIII. Lesions Exhibited by Normal, Pituitary, Lecithin, Cholesterol, and Tethelin-Fed White Mice at Occurrence of Natural Death with Especial Reference to Incidence and Development of Spontaneous Cancer.—p. 443.
Id. XIV. Influence of Tethelin on Growth of White Mouse.—p. 455.
Absorption Spectra of Acid Hematin, Oxyhemoglobin and Carbon Monoxid Hemoglobin. New Hemoglobinometer. H. S. Newcomer, Washington.—p. 465.

Blood Catalase.—The increased oxidation in diabetes is attributed by Burge to the increase in catalase which is due to the stimulation of the liver to an increased output of this enzyme by acetone and β-hydroxylbutyric and acetoacetic acids.

Journal of Medical Research, Boston

January, 1919, 39, No. 3

*Endocardial Lesions Developing During Pneumococcus Infection in Horses. A. W. Wadsworth, Albany, N. Y.—p. 279.
Successful Treatment of Giardiasis in Rats with Arsenobenzol. C. A. Kofoid, W. C. Boeck, D. E. Minnich and J. H. Rogers, U. S. A.—p. 293.
*Fate of Typhoid Bacilli Injected Intravenously into Normal and Typhoid Immune Rabbits. J. T. Parker and E. Franke, New York City.—p. 301.
Gross and Minute Anatomy of Spleen in Health and Disease. L. Gross, Montreal.—p. 311.
*Unusual Diffuse, Indolent Ulceration of Intestine with Filamentous Mycobacteria, Following Empyema of Pleura. C. T. Crowdy, Montreal.—p. 338.
*Methods of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria. J. Bronfenbrenner, C. R. Davis and K. Morishima, Cambridge, Mass.—p. 345.
*Bacteriology of Canned Foods. J. Weinzirl, Seattle, Wash.—p. 349.
Regulation of Intestinal Flora of Dogs Through Diet. J. C. Torrey, New York City.—p. 415.

Pneumonococcus Infection and Endocardial Lesions.—The postmortem examination of seven horses immunized against Types I, II and III of the pneumococcus showed that horses undergoing active immunization by the intravenous inoculation of living virulent pneumococcus cultures develop infectious processes locally in the joints and in the tissues of the organs, but especially in those of the heart, including the heart valves. These lesions are intimately associated with injury of the blood vessels due to the action of the pneumococcus poisons, and are thus infectious processes in which the bacterial development may be evanescent and promptly followed by complete resolution or by reparative processes with scar tissue, or the bacterial development may persist, inciting varying degrees of inflammatory reaction and necrosis before the bacteria are destroyed and the reparative process heals the injury. All stages of these lesions were found in the heart valves: petechial and larger hemorrhages with and without inflammatory reaction and larger and smaller areas of necrosis in which pneumococci were present in large or small numbers or absent altogether, all in various stages of development, resolution and repair.

Wadsworth calls attention to the fact that these lesions correspond with those of acute and chronic endocarditis in man. The anatomic changes of the ulcerative or vegetative and the sclerosed lesions in man are all to be found in these lesions of the horse. It is, therefore, not necessary to assume that the chronic lesions of endocarditis in man, however slight or marked, or however free from evidences of bacterial activity, have not been originally infectious processes. The importance of predisposing injury determining the localization of the bacteria is also demonstrated by Wadsworth, but it is evident that the bacterial poisons produce this injury so that the bacterial localization may be practically coincident with it or follow it immediately. It also appears that in these experiments on the horse, and doubtless also in the disease as it occurs in man, the endocardial lesions arise from injury of the bacteria and their poisons carried to the endocardial tissues through the coronary circulation and not from the direct action on the endocardium of bacteria and their products passing in the main blood stream of the ventricles and auricles. Wadsworth points out that in order to clarify our conceptions of pneumococcus infection, and doubtless also streptococcus infection, it is necessary to recognize the parasitic and the toxic activities of the inciting agents as being distinct phases of the infectious processes and yet not as entirely separate or independent activities because they are in point of fact closely linked and largely, if not wholly, dependent one on the other.

Typhoid Bacilli Injected into Rabbits.—An attempt was made by Parker and Franke to demonstrate some difference in either the killing or localization of typhoid bacteria in normal and immune rabbits. Their results were entirely negative in regard to the killing of the bacteria. Both in normal and immune animals the bacteria are taken up and killed in the organs with extraordinary speed. The lungs of immune rabbits, however, take up a slightly greater number of bacteria than do normal lungs.

Diffuse, Indolent Ulceration of the Intestine.—The lesion reported by Crowdy was found during [illegible] ortem nation of the body of a man who died of bronchopneumonia following empyema. The large intestine showed an indolent ulceration, most marked in the cecum and ascending colon. The dependent part of the cecum escaped to a large degree, but close to the ileocecal valve was a large irregular ulcerated area (about the size of a 50-cent piece) in which the mucous membrane was entirely lost, except for a few very small, irregular strands. In the ascending colon the surface of the mucous membrane had a honeycombed appearance, being made up of innumerable small, irregular, shallow, pale ulcers with sloping necrotic margins separated by about an equal amount of degenerating mucous membrane. Toward the hepatic flexure the ulceration became less diffuse, and large, isolated and irregularly outlined ulcers occurred, giving the mucous membrane a moth-eaten appearance. These gradually diminished in number and disappeared near the splenic flexure. The lower end of the ileum also showed a few scattered irregular ulcers similar to those in the transverse colon and extending upward for about 90 cm.

A considerable number of sections, both from the ileum and cecum, were stained by the Gram-Weigert method, with the following result: On the surface of the intestine, the usual numerous forms of bacilli and cocci were present. Within the tissues, however, a large mycobacillus of marked pleomorphism was to be seen. A very common form was a long, thick rod with rounded ends, which stained in alternating darker and lighter segments. This was found in the submucosa beneath the ulcers, and in the islands of the mucosa. With it occurred spherical coccoid bodies, and transitions to bacilli. They were diffuse, in bunches or isolated. A second, also common, form was an elongated, club-shaped, frequently curved or bent, slender organism carrying conidia at one pole, often resembling an exclamation sign, or spermatozoon in shape. This appeared in various modifications and transitions. In some of the smaller veins and capillaries other forms of apparently the same micro-organism were detected. The character of the threads and apparent lack of true branching point to cladothrix.

Identifying Culture Medium for Colon-Typhoid Group of Bacteria.—Bronfenbrenner and his associates use fresh milk and milk-whey for culture material. It is prepared as follows: Heat fresh milk in the Arnold sterilizer for fifteen minutes, place on ice for eight to twelve hours; separate the cream; dilute one part of milk with three parts of water; add indicator (CR [mixture of China blue and rosolic acid]) at the rate of 2.5 c.c. per hundred c.c. of diluted milk; boil for five minutes; if too acid adjust the reaction until pale gray color is obtained; distribute in sterile tubes containing inverted vials, and autoclave at 15 pounds pressure for ten minutes. In the preparation of milk-whey medium, use fresh milk; siphon the milk from under the cream; bring it to boiling and add 2.5 c.c. of 10 per cent. $MnCl_2$ solution to each 100 c.c. of milk; cool the mixture as soon as the clot is formed and filter through a single layer of cloth; titrate an aliquot portion hot and adjust the bulk of the medium to neutral reaction ($1x10^{-7}$); bring quickly to boiling, cool and filter through paper; dilute the filtrate with double its volume of water and add 1 c.c. of CR indicator for 100 c.c. of medium. (At this point the medium will have an intensely blue color.) Dilute into sterile tubes containing inverted vials and autoclave at 15 pounds pressure for ten minutes. Immediately after autoclaving the medium will have a pink color. On cooling it will become colorless if it is properly neutralized. However, a slight tinge of blue or pink will be very easily distinguished from the intense color due to the progressive change in hydrogen ion concentration during the growth of the culture.

In making milk-whey agar, an agar jell of 3 per cent. concentration in plain water is sterilized and diluted with an equal volume of neutralized milk-whey. While the mixture is hot add CR indicator at the rate of 0.5 c.c. for each 100 c.c. of medium, distribute into sterile tubes and sterilize for ten minutes at 15 pounds pressure. In the authors' experience, this medium is fully as useful as lactosepeptone water or lactose agar, but cheaper and easier to prepare.

Bacteriology of Canned Foods.—Bacteriologic examinations were made by Weinz[illegible] of 1,018 samples of canned goods. The organisms isolated from these 1,018 samples of canned goods comprised yeasts, molds, and bacteria. The most prevalent species of bacteria were *B. mesentericus, B. subtilis, B. thermoindifferens, B. vulgatus* and *B. cereus.* The most prevalent mold was *Aspergillus nidulans.* In commercial canned foods giving no evidence of spoilage, micro-organisms were found in 179 out of a total of 782 cans, or in 23 per cent. of the cases. After the food is processed, the spores remaining alive in the cans are unable to develop because of the absence of free oxygen. When air is admitted the spores may germinate and spoil the food. Members of the paratyphoid-enteritidis group were not found, nor was *B. botulinus* ever isolated.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1919, **12**, No. 7

*Pertonal: Acetyl-Amido-Ethoxy Benzene. D. Cow, Cambridge, Mass. —p. 343.
*Pharmacologic Action of Allocain S. (New Local Anesthetic) S. Kubota, Mukden, Japan.—p. 361.
*Effect of Atropin on Ether Hyperglycemia. E. L. Ross, Chicago. —p. 377.

p.Acetyl-Amido-Ethoxy Benzene. — The pharmacologic actions of pertonal (acetyl-amido-ethoxy benzene) have been investigated by Cow and a comparison made between it and phenacetin. Pertonal possesses approximately one half the toxicity of acetphenetidin (phenacetin) and as an antipyretic it produces similar effects in doses approximately double those of acetphenetidin. Acetphenetidin exerts a directly depressant action on the heart, which is actually stimulated by pertonal. Against an antipyretic ratio of 2 parts of pertonal to 1 part of acetphenetidin, the corresponding ratio for narcotic action is approximately 15 to 1. In general the action of pertonal is less abrupt and more prolonged than that of acetphenetidin. Both drugs are excreted mainly in the urine in the form of p. amidophenol and phenetidin. It appears that a larger amount of phenetidin and a correspondingly smaller amount of p.amidophenol is set free in the tissues by pertonal than by acetphenetidin. No evidence of methemoglobin formation has been found after pertonal, whereas this change is often found after acetphenetidin. No evidence of oxalic acid formation after pertonal has been found, though this was specifically sought for. A range of therapeutic dose of 10 to 20 grains or more is recommended: it is suggested, too, that the dose need not be repeated so frequently as the dose of acetphenetidin.

Pharmacologic Action of Allocain S.—Allocain S. and Allocain A. are synthetic products made by Nagai by introducing into mydriatin mono-ethyl and di-ethyl and benzoyl groups. Kubota studied the pharmacologic action of Allocain S. He found that it causes paralysis in frogs and convulsions in rabbits, acting on the central nervous system. The lethal dose, when injected subcutaneously, is smaller than that of cocain and procain. It causes a local paralysis of sensory nerve endings and nerve fibers, and its anesthetic power is stronger than procain and weaker than cocain. Allocain S. has a twofold action on blood vessels: a primary dilation and a secondary constriction, and in warm blooded animals the former action, and in cold blooded animals the latter appears more marked. Subcutaneous injections of Allocain S. cause a slight local irritation. A great amount of it paralyzes the heart, acting on the motor apparatus and conductive system, and causes in frogs a paralysis of respiration and in rabbits a stimulation of it, which action seems to be the central character. The blood pressure is influenced by Allocain S. The substance produces a primary fall of pressure which is followed by a rise above the normal. It inhibits the growth of both streptococci and staphylococci. Allocain S. is a good local anesthetic in many respects, but on the other hand it has also some unfavorable qualities. On account of the slight irritation by its acid solutions and of its precipitation by tissue fluids, its use is limited. Allocain S. has been tried in several hundred cases of operation with success.

Effect of Atropin on Ether Hyperglycemia.—The animal experiments made by Ross showed that atropin reduces markedly ether hyperglycemia; the greatest reduction is in the first fifteen minutes.

Kansas Medical Society Journal, Topeka

March, 1919, **19**, No. 3

Infection of Accessory Nasal Sinuses. G. H. Itsinger, Topeka.—p. 49.
Chronic Peritonsillar Infections. W. Lapat, Larned, Kans.—p. 54.

Medical Record, New York

March 22, **95**, No. 12

Rôle of Cell Necrosis and Bacterial Invasion in Surgery. F. B. Turck, New York City.—p. 471.
Suggestions for National Museum of Medicine. R. W. Shufeldt, Washington.—p. 482.
Medical Treatment of Appendicitis. A. Abrams, San Francisco.—p. 484.
Nature of Shock. H. Crutcher, Tolarosa, N. Mex.—p. 485.

New York Medical Journal, New York

March 22, 1919, **109**, No. 12

Tuberculosis in Children. J. P. C. Griffith, Philadelphia.—p. 485.
Value and Limitations of Radium in Treatment of Cancer. R. H. Boggs, Pittsburgh.—p. 488.
*Clinical Study of Influenza Pneumonia. A. D. Rood, Takoma Park, D. C.—p. 493.
Etiology and Treatment of Bronchial Asthma. W. C. Thro, New York City.—p. 500.
Bronchial Asthma in Children. W. H. Donnelly, Brooklyn.—p. 503.
Clinical Application of Quartz Ultraviolet Light in Constructive Tissue Chemistry. D. McCaskey, New York City.—p. 504.
Abuse of Alcohol for Rubs and Other Bodily Uses. N. Rosewater, Cleveland.—p. 506.
Prevention of Postoperative Thirst. B. Van Hoosen, Chicago.—p. 507.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 509.

Influenzal Pneumonia.—As the great majority of patients extremely ill showed typical signs of shock, various efforts were made by Rood and his associates to combat this condition but no results beyond a temporary improvement were observed. The fluid extract of ergot was used with good temporary results. Ergotin was used with no noticeable action. Epinephrin and pituitary extract were practically useless, neither producing any rise in blood pressure or even a transitory stimulation. Alcohol in any form was seldom used. Locke's solution with 13 per cent. acacia was given in a number of cases intravenously, in order that the presence of a colloid might possibly prevent, to a certain extent, the absorption of toxin, and, at the same time furnish a diluent. This solution gave the most striking results, improvement often being immediate and continuing from six to eight hours. It gave best results when given from two to three times a day, at six or eight hour intervals. Bromids in full doses when the patient was restless and unable to sleep. Occasional doses of chloral hydrate were given either for its direct hypnotic action or to fortify the effect of bromid. Codein was used in preference to morphin to relieve pain and troublesome dry cough. Expectorants and narcotics of all kinds were avoided as most of these patients were already half drowned with exudates. Morphin was used only as a last resort or when pain could be controlled in no other way. Immune serum obtained from patients who had been convalescent from the disease for seven to ten days, was used in six cases, with curative results in only one instance. In most of these cases it did not appear to influence favorably the course of the disease in the least degree. Results obtained by oxygen were transitory, and as the condition progressed the cyanosis became as pronounced as before.

It was noted that often the patient was greatly relieved by lung puncture, especially if a pneumothorax followed the operation, and it was not uncommon for patients to request that the operation be repeated. Patients frequently showed a drop in temperature following puncture and a temporary improvement in physical signs. The cough and sputum would increase for a short time, followed by a marked decrease in the number of râles within a few hours. The results following this procedure led to the opinion that the production of a slight positive pressure in the side showing greater involvement might materially aid in compressing the profuse exudate from the affected lobes. With this purpose in view, an artificial pneumothorax was produced in three patients, in the hope from 100 to 150 c.c. of air into the pleural cavity, in the same manner as has been frequently carried out in the treatment of tuberculosis. These three cases were considered hopeless at time of injection. Two of the patients recovered, but the third one, whose case was considered hopeless, being intensely cyanosed, delirious, and moribund, became conscious and rational, and very few râles were to be heard in the chest of the side operated on and breath sounds were quite distinct. He continued to improve for thirty-six hours, when he again became delirious and comatose, dying forty-eight hours after operation.

New York State Journal of Medicine, New York

March, 1919, **19**, No. 3

Scientific Study of Delinquents. W. Healy, Boston.—p. 79.
Mentality of Adolescent Delinquents. A. T. Bingham, New York City.—p. 85.
How to Avoid Spoiling the Child. L. F. Barker, Baltimore.—p. 89.
Syphilis and the General Practitioner. A. T. Lytle, Buffalo.—p. 97.

Pennsylvania Medical Journal, Athens

March, 1919, **22**, No. 6

Plastic Surgery of the Face and Orbit in Relation to War Injuries. H. W. Scarlett, Philadelphia.—p. 337.
*Postoperative Sequelae of Acute Appendicitis. J. B. Deaver, Philadelphia.—p. 340.
Aseptic Technic in Obstetrics. C. G. Strickland, Erie.—p. 344.
*Fallacies of Methods of Giving Colonic Irrigations in Children. H. B. Mills and G. C. Bird, Philadelphia.—p. 346.
Nutritive and Blood Changes in Rats on Cancer Inhibiting and Stimulating Diets. E. P. Corson-White, Philadelphia.—p. 348.
*Physical Examination in Diagnosis of Early Pulmonary Tuberculosis. L. Hamman, Baltimore.—p. 353.
Application of Principle of Advanced Psychiatry. J. A. Jackson, Philadelphia.—p. 358.
Nervous and Mental Sequelae of Infectious Diseases. A. Gordon, Philadelphia.—p. 362.
*Combating Septicemia: Use of Arsphenamin. S. R. Haythorn, Pittsburgh.—p. 368.
*Treatment of Syphilis of Central Nervous System. T. P. Tredway, Erie.—p. 375.
Intraspinal Auto-Arsphenaminized Serum Treatment of Cerebrospinal Syphilis. B. A. Thomas, Philadelphia.—p. 377.
Plastic Operations in Vagina and on Pelvic Floor. S. E. Tracy, Philadelphia.—p. 384.
Unusual Casualties. L. F. Frescoln, Philadelphia.—p. 390.
Health Insurance. I. Stern, Philadelphia.—p. 391.

Appendicitis.—Abstracted in The Journal, Nov. 23, 1918, p. 1769.

Fallacies of Colonic Irrigations.—Mills and Bird point out that when more than 4 or 5 inches of tube are inserted into the rectum it coils on itself, the end of the tube turning and coming back to the anus and, although apparently this does not interfere at all with the passage of the solution, as it is shown to have traversed the full length of the colon in spite of the coils, the occurrence of this coiling naturally suggests the question of the advisability and necessity of passing so much of the tube into the colon. The apparatus tested by the authors consists of a container for the fluid, held 18 to 24 inches above the level of the patient, to which is attached a rubber hose, at the end of which is a glass or hard rubber tip, and a soft rubber rectal tube or catheter. They first pass the well-oiled rectal tube or catheter into the rectum about 2 inches, the child lying on its back or left side on a Kelly pad. The tube is held in this position for a few minutes to allow of the escape of gas, as it has been found that the pain frequently complained of during colonic irrigation is entirely avoided if the gas is first gotten rid of. It is equally important to rid the tube attached to the container of all air by letting a few drops of the fluid pass through. The free end of the rectal tube or catheter is then slipped over the glass or hard rubber tip so that continuous connection exists between the child and the solution to be used, and the catch is then gradually sprung so that the fluid begins to flow slowly into the colon, the insertion of the rectal tube or catheter being at the same time gradually increased, often to a distance of 8 or 10 inches or more. The fluid used is usually either normal salt or 2 to 5 per cent. sodium bicarbonate solution; the temperature is about 100 F., and the quantity employed is rarely less than 2 quarts, and much more if it is not returning clear. The rectal tube or catheter has two holes at the end to be inserted in the rectum, one at the tip and the other at the side about one-half inch from the tip, so that should one become plugged with mucus or fecal matter, the solution would pass through the other. When the colon is fully distended contraction takes place, which expels much of the contents, as shown by the squirting of the returning solution along side of the tube, so that there need be no fear of too much fluid being used. Massage of the abdomen when the colon is distended with fluid is often beneficial.

Pulmonary Tuberculosis.—Abstracted in The Journal, Nov. 23, 1918, p. 1770.

Septicemia.—Abstracted in The Journal, Nov. 23, 1918, p. 1770.

Cerebrospinal Syphilis.—Abstracted in The Journal, Nov. 30, 1918, p. 1855.

Southwestern Medicine, El Paso

February, 1919, 2, No. 14

Use of Conjunctiva in Perforating Ocular Injuries. S. A. Schuster, El Paso, Texas.—p. 4.
Treatment of Peptic Ulcer from Internist's Standpoint. F. D. Garret, El Paso, Texas.—p. 4.
Lay Impressions of War Time France. P. Gallagher, El Paso, Texas. —p. 7.
Uniform Temperature in Prevention of Influenza and Pneumonia; Frequent Complications. S. L. Burton, Albuquerque, N. Mex. —p. 11.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 1, 1919, 2, No. 3035

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Defense of Respiratory Membrane Against Influenza.—To combat the influenza infection, Hill urges the deep breathing of cool air, brought about by exercise, sleeping in open air, and as an adjunct any spray, gargle, or snuff which enhances the outflow of secretion from the respiratory membrane of the nose and throat. He says that the wearing of a mask, by raising the temperature and humidity of the air breathed, is against the natural defensive mechanism. The natural defense must be raised by the discipline of open-air exercise and by proper housing.

Treatment of Influenza.—Groups of patients—fifteen in each—were put on different drugs by Small and Blanchard and the progress of the various groups noted and compared. Aconite, acetylsalicylic acid, sodium salicylate, belladonna, arsenic, quinin, Dover's powder, and gelsemium were tested in this way. The patients treated by gelsemium improved in a manner far exceeding those given any other treatment. After a few doses headache and backache had been much relieved, and the patients felt greatly benefited in every way. In most patients, the temperature speedily commenced to fall, and the improvement in the general condition was obvious. Of the other drugs tested, belladonna showed evidence of beneficial action in a number of cases, but none of the other drugs appeared to have the slightest influence. The patients were not selected in any way, but were taken consecutively as they were admitted. All recent cases, therefore, have been treated with the following mixture:

	gm. or c.c.		
℞ Tr. gelsemii	73		♏ xij
Tr. belladonnae	33		♏ v
Potassii citratis	66	or	gr. x
Syr. aurantii	4		℥ j
Aq. chloroformi ad	30		℥ j

Sig: One ounce four hours for the first 24 hours; thereafter ½ ounce every four hours until temperature is normal.

Potassium citrate is added as a mild diuretic. When the temperature reaches the normal the remedy should be stopped.

Acriflavine Emulsion as Wound Dressing.—The formula (Humphrey's) of an emulsified preparation of the dye endorsed by Stowell is as follows: Acriflavine, 0.1; thymol, 0.005; white wax, 4.0; liquid paraffin, 76.0, and distilled water, 20.0. This emulsion is put up in small sterile bottles, stoppered and sealed. The addition of the thymol has given better results in cases of mixed infection, and its presence has not prejudiced the results in the simpler cases. In dealing with broken down tuberculous glands, after scraping, Stowell introduces a small quantity of the emulsion before closing the wound.

Treatment of Acute Gonorrhea.—It is now an Australian Army Medical Corps order that the massage-pack method of early treatment of gonorrhea shall be used to the exclusion of all others. The treatment consists in packing the anterior portion of the urethra with a material soaked in a silver solution. The pack not only absorbs the discharge and drains the infected part, but, by mechanically dilating the urethra, it enhances the prospects of the chemical reaching the site of the infection, and prevents apposition between infected and noninfected surfaces. For packing, Fogarty has found soft gauze far superior to cotton-wool. It is more absorbent, less irritating, and is more easily passed into and withdrawn from the urethra; it has no tendency to break, and shreds are not detached from it. In the large majority of cases argyrol has been used. From a curative point of view an argyrol solution stronger than 5 per cent. is not necessary, and 7 and 10 per cent. show a tendency to cause soreness, necessitating less frequent packing, thus depriving the patient of the benefit of the mechanical advantages of the pack. Fogarty has found hemorrhage even with 10 per cent. a rare occurrence, and not in one single instance with 5 per cent. There were only seven failures in 742 cases treated.

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Cases of Foreign Body in Air and Food Passages. T. Guthrie.—p. 38.
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Early Treatment of Compound Fractures and Other Severe Injuries of Upper Limb. E. G. Slessinger.—p. 365.
Hysterical Element in Organic Disease and Injury of Central Nervous System. A. F. Hurst and J. L. M. Symns.—p. 369.
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*Spirochetes in Blood in Trench Fever. A. C. Coles.—p. 375.
Lower Uterine Segment and Uterine Tendons. E. H. Tweedy.—p. 376.
*Attenuation of Human, Bovine, and Avian Tubercle Bacilli. N. Raw. —p. 376.
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Unilateral Hydrothorax Due to Disease Below Diaphragm: Two Cases. W. G. Nash.—p. 378.

Detoxicated Vaccines.—Thomson has conducted extensive researches on the removal of the endotoxins from the gonococcus and other organisms in order to produce nontoxic vaccines which could be injected in sufficiently large doses to develop a great amount of immunity. The toxicity of most germs was successfully reduced some fifty to 100 times. Thus, with ordinary gonococcal vaccine it was found necessary to begin in acute cases with doses not exceeding 5 millions and gradually to increase to about a maximum of 250 millions. On the other hand, the same strains of gonococci when detoxicated could be administered in acute cases in doses of 2,500 millions and increased to 10,000 millions. These large doses caused even less toxic symptoms than the small doses of the ordinary vaccine.

The therapeutic results obtained corresponded very markedly with the serologic tests. Thus it was found that the cases which showed the highest degree of immunity as estimated by the complement-fixation test recovered much more devoted to physiotherapy, as he was an international authority rapidly, and vice versa in those which showed a low degree of complement fixation the disease ran a prolonged course. The dose of 200 millions of ordinary gonococcal vaccine produced malaise and fever in the normal subject, whereas the symptoms arising from a dose of 5,000 millions of the detoxicated vaccine were scarcely noticeable and no fever was induced. Experiments have been carried out with detoxicated vaccines for the prevention and treatment of bronchial and nasal catarrh and the results so far have been very promising. Thomson says that the clinical evidence is increasingly convincing that this detoxication process will revolutionize the whole subject of vaccine treatment and preventive inoculation.

Spirochetes in Blood in Trench Fever.—In two out of six cases of trench fever Coles found a few spirochetes or spirochetal-like bodies in one or two of the many films examined. These structures vary considerably in their form, but they have in common the fact that with Giemsa they are all stained a delicate blue tint; they are all faintly granular, and in no case are the ends pointed. Whether they have any actual causal relation to trench fever, Coles does not say. The fact that they were detected only in the blood of definite cases of artificially induced trench fever, and then only during the first attack of fever, he believes is at least suggestive.

Attenuation of Tubercle Bacilli.—The effect of long continued and regular subculturing of pure cultures of human, bovine, and avian tubercle bacilli on artificial mediums containing glycerin is reported by Raw. This process has been continued without interruption for twelve years and the cultivations are luxuriant and grow as readily as in the first year of subculturing. They retain all their characteristics and selective appearances, and can easily be identified as distinct types of tubercle bacilli. The real object of this work was to find out if it was possible to reduce the virulence of the bacilli to such a degree that it might be possible to use them therapeutically in the treatment of active tuberculosis. In 1914, several animals were inoculated with bacilli of nine years' attenuation with practically negative results. In no case was any progressive tuberculous process set up in the animals, and postmortem examinations showed no active tuberculosis. Eight cases of apparently hopeless tuberculosis of the glands, bones, joints and lupus; all discharging sinuses were treated with injections of living bacilli at intervals of one week. The injections were made subcutaneously in the triceps region, and aside from redness and slight swelling no bad effects were observed, and the patients noticed nothing unusual. Later, four cases of acute and active pulmonary tuberculosis with large numbers of bacilli in the sputum were treated in the same way. All these patients are still living, and a full report will be published after an interval of five years from the date of treatment. In all of the cases treatment with mixed bacilli was given, the cultures being raised to a temperature of 220 F. for two minutes before injection.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 6, 1918, **42**, No. 34

*Sugar and Urea in Cerebrospinal Fluid. Dumolard, Lochelongue and Regnard.—p. 1121.
*Serotherapy of Gas Gangrene. Sacquépée and de Lavergne.—p. 1125.
*Gastric Juice in Fasting Stomach. F. Ramond and Robert.—p. 1134.
*Gangrene of Lung and Pneumothorax. A. de Verbizier and Loiseleur.—p. 1139.
*Nervous and Mental Sequels of Icterohemorrhagic Spirochetosis. S. Costa and J. Troisier.—p. 1142.
*Benzol in Myeloïd Leukemia. H. Bourges.—p. 1149.
Hyperthyroidism Following Emotional Stress, with Hypertrophy of Parotid Glands. G. Railliet.—p. 1151.

Diagnostic Importance of Sugar and Urea in the Cerebrospinal Fluid.—Dumolard relates that in eighteen of seventy cases of nervous or mental disturbance, at a special army neuropsychiatric center, the cerebrospinal fluid showed an abnormally large proportion of sugar or of urea or of both combined, without any reaction on the part of the leukocytes, and without hyperalbuminosis. In the other cases there was sometimes an excess of sugar or urea but there were other reactions evident as well. In these eighteen cases the sugar content was over 0.80 gm. and the urea over 0.25 gm. per liter, and all these men presented severe nervous or psychic disturbance. The tabulated findings suggest that in the sugar and urea content of the fluid we have an early sign of pathologic conditions, the first revelation of organic disturbance in the functioning of the nervous system. In some of their cases there were evidences of meningeal hemorrhage, softening of the brain or epilepsy, jacksonian in one case.

Gas Gangrene.—Sacquépée discusses the pathogenesis of gas gangrene and the action of serotherapy according to the effects of the specific serum on guinea-pigs. This indirect test, the "protected guinea-pig test" as he calls it, is based on the specific protection conferred on the animal by the antitoxic serum against inoculation of the corresponding pathogenic microbe. An emulsion of a scrap of gas gangrene tissue containing one or more of the pathogenic species kills the guinea-pig. But if the guinea-pig has been previously protected by the corresponding antiserum, the animal will survive while the controls all die, as also those animals protected only with an antiserum specific for other microbes than the one directly involved. In their twenty-five experiments, the *Bacillus bellonensis* was found alone or associated in fifteen, the perfringens in fourteen, and the septic vibrio in nine of the total twenty-five.

Gastric Juice in the Fasting Stomach.—Ramond and Robert found in normal soldiers that the fasting stomach was empty on the usual meat diet. But on a milk diet, and also on a purely vegetable diet, gastric juice was found in the fasting stomach quite often. In the dyspeptic, gastric juice was found in the fasting stomach in 66 per cent. of 100 examined, but the amount of hydrochloric acid varied with the amount of meat in the diet. In the mild cases the meat seemed to reduce the hydrochloric acid content, and thus aided in the prognosis. The amount of gastric juice ranged from 20 to 50 c.c. in ordinary dyspepsia; above 100 c.c., some degree of stenosis can probably be assumed. In the discussion it was emphasized that traces of food always indicate more or less stenosis of the pylorus. The general conclusions of Ramond and Robert are to the effect that gastric juice can be found in the fasting stomach even in normal persons on a vegetable diet, but there should not be any present on a meat diet. In the dyspeptic, gastric juice is found in the fasting stomach, but this gastrosuccorrhea, although almost constant, has no pathologic significance unless it is profuse and continuous, and is uninfluenced by modification of the diet.

Gangrene of Lung Heals Under Induced Pneumothorax.—De Verbizier and Loiseleur witnessed the development of a focus of gangrene in the lung a week after the onset of grave influenza with involvement of the right lung. The resulting cavity was partially drained into the bronchus but not adequately, and the general condition was growing graver. The roentgen rays showed the clear outlines of the gangrenous cavity, and by inducing artificial pneumothorax this compressed the lung so effectually that the contents of the cavity were squeezed out. The walls of the cavity were thus pressed together, and definite healing soon followed. They state that in fifteen days the rays showed integral restitution of the parenchyma of the lung. During the interval, the 200 c.c. of air that had been injected were completely absorbed and the diaphragm was functioning clinically normally. Success with this technic naturally depends on the possibility of an effectual pneumothorax and on the cavity draining into one of the larger bronchi. It would be dangerous to compress a gangrenous focus connecting merely with one of the smaller bronchioles.

Nervous and Mental Sequels of Icterohemorrhagic Spirochetosis.—Costa and Troisier have previously described what they call the psychomeningeal form of this spirochetosis. They here report three additional cases, and call attention to the coincidence in the same patient of psychic disturbances, impairment of vision and modification of the reflexes, demonstrating the profound, durable and widespread damage of meninges, brain and medulla possible in icterohemorrhagic spirochetosis. Mania and confusion persisted even after recovery, and mental weakness with instability and irritability was marked in all three of the patients. One presented stigmata suggesting degeneracy but the others seemed to be free from any predisposition of the kind. The existence also of organic sequels, especially renal, sustains the connection between the mental impairment and the spirochetosis. This psychomeningeal form was observed only in the graver cases, with uremia (one with very high urea content in the spinal fluid), dilatation of the heart, prostration, anemia, intense jaundice, photophobia, and extreme tenderness of the eyeballs. The Wassermann reaction is usually positive during this spirochetosis but veers to negative during convalescence; in one of the men it has persisted positive during the year to date, and there is nothing otherwise to suggest syphilis. One of the men presents also a double Babinski with exaggeration of the tendon reflexes, suggesting tenacious injury of the pyramidal tracts. Weeckers and Firket have reported cases of iritis and even a curable optic neuritis for which the icterohemorrhagic spirochetosis was evidently responsible.

Benzol in Myeloid Leukemia.—Bourges treated with benzol a man of 35 presenting symptoms of myeloid leukemia, giving 100 drops in milk three times a day. Gastro-intestinal disturbance and albuminuria the second day compelled the reduction of the dose to 50 drops, gradually returning to the former dose. This was kept up for two months and a half, with intervals of suspension every ten days, and marked improvement was evident. He gave up the treatment then, but returned ten months later in a very precarious state. Resumption of the benzol then failed to relieve and the man died in two weeks. During the first stage of treatment the blood improved, the spleen became reduced in size, the number of reds increased while the leukocytes and myelocytes became much reduced in numbers, and the whole condition showed pronounced improvement. It is therefore in the early phase of leukemia, during the almost latent stage, that benzol produces its finest effect. It seems advisable also to continue it for several months at a time, with possibly roentgen exposures in the intervals. This case, with others on record, teaches the wisdom of beginning with small doses, testing the susceptibility of the patient.

Nourrisson, Paris

January, 1919, 7, No. 1

*Vomiting in Infants. A. B. Marfan.—p. 1.
*Increase in Weight During First Year of Life. L. Broudic.—p. 13.
*Emergency Surgery on Infants. R. Flament.—p. 23.
Child Welfare Legislation in France. A.-B. Marfan.—p. 32.

Vomiting in Infants.—Marfan discusses accidental and habitual vomiting in infants and cyclic vomiting, warning that sudden vomiting in the midst of health may be the first symptom of infectious disease. The temperature should be taken and signs of meningitis be sought, or of special intolerance for cow's milk, or signs of a strangulated hernia or invagination. Vomiting by a new-born child should suggest the possibility of congenital stenosis or imperforate anus. Only after all these causes have been excluded, should we think of a gastric origin for the vomiting. The symptoms of acute indigestion subside when the stomach and bowel have been emptied, which is important in differentiation of the cause of the vomiting. He does not give a purge or emetic, as this often seems to aggravate the condition. Restriction to water, with a few enemas, cures the child. The cause of the acute indigestion is an overabundant meal, especially when the preceding meal has not had time to complete its digestion, or a new dish may be the cause of vomiting. Some physicians have noticed that exposure to prolonged cold may induce indigestion and vomiting in infants. With bowel trouble, vomiting is usually an associated symptom, not taking the prominent place except possibly at the onset of trouble. Occasional regurgitation in infants is physiologic, but habitual regurgitation indicates that the child is gettng too much food. Breast fed chldren are the ones that present it most frequently, as they can tolerate overfeeding longer. Repeated hiccuping also indicates that even if the food is well digested, the child is getting too much. Excessive drooling has the same significance. Moderate drooling may occur because the infant does not know how to swallow saliva. It may accumulate in the mouth and throat and make the breathing noisy, suggesting stridor, etc. Up to the fourth or fifth month very little saliva is secreted. After this, coryza or adenoids may force the child to keep its mouth open and all the saliva may drool out although the amount secreted may be only the normal quantity.

Increase of Weight During First Year of Life.—Broudic gives the average weight of 112 infants as recorded at birth and at regular intervals thereafter. His records include really 2,000 infants but he was not able to have them all weighed at the specified intervals, so he bases his tables on only 300. Only one third were breast fed. These children increased in weight regularly and rapidly during the first six months, more slowly during the last six months. Only a few doubled their weight at birth by the fifth month, but even in this group the weight at birth had not trebled by the close of the year. The increase in weight is irregular with bottle fed babies; slow during the first three months and more rapid during the second three months. Infants given both breast and bottle increased in weight more regularly, like the breast fed. Whatever the mode of feeding, the weight shows comparatively little increase from the twenty-sixth month on, and the weight may remain stationary for a time or even decline. These irregularities are particularly manifest after the twenty-ninth week. He gives a chart and various tables and emphasizes the difference between his figures and those of others. The 2,000 infants were examined under the auspices of the Union maternelle of the fourteenth arrondissement of Paris. The average weight at birth was 3,280 gm.; at 5 months, 6,250 gm.; at 6 months, 6,710 gm.; at 1 year, 8,770 gm.

Emergency Surgery for Infants.—Flament refers to strangulated hernia, invagination of the bowel, osteomyelitis, mastoiditis and imperforate anus. With strangulated hernia he succeeded in overcoming the spasm, with the spontaneous retrogression of the strangulation, in seven among twenty-nine cases; in the others an operation was required and only two of the children died; the strangulation in these was of long standing. In seven spontaneously retrogressing cases he had had the child put at once into a warm bath. Gentle, cautious massage is allowable. Hot compresses can be applied for an hour or two, and with a few drops of chloroform the hernia may be reduced, but extreme gentleness and caution are necessary as the intestine is already damaged by the strangulation. Some device, like a hot water mattress under the infant, to ward off chilling during the operation, is indispensable. With invagination, the prognosis depends on the early diagnosis and prompt intervention, within the first twelve hours. The death rate runs up to 37, 54 and 78 per cent. the second, third and fourth days. Osteomyelitis in infants may be traced to the inadequate protection afforded by the skin. Flament recently encountered vertebral osteomyelitis in a 4 months infant, and osteomyelitis of the femur in one only 6 weeks old, and in the hip joint in one of seven weeks. Mastoiditis is merely osteomyelitis of the temporal bone, and in the twenty-one cases in infants in the clinic there had been preceding otorrhea in fifteen. The outer wall of the mastoid antrum is extremely thin in infants, and spontaneous trephining occurred in twelve of the twenty-one cases. The surgeon has only to enlarge the spontaneous opening. In infants the antrum is a little above and back of the external auditory passage, different from its location in older children. Only by prompt intervention can meningitis be warded off; five of twenty-one infants died from this cause. In operating for imperforate anus it is important to apply an appropriate technic; a simple incision may entail stricture. The rectal ampulla should be loosened and fastened to the skin, even if this requires a laparotomy. This combined operation was done recently on a day-old babe with complete success to date, three years later.

Paris Médical

Feb. 1, 1919, 9, No. 5

*Mishaps from Exposure to Roentgen Rays. E. Albert-Weil.—p. 81.
*Post-traumatic Spondylitis. J. Cluzet.—p. 92.
*Roentgen Findings in Tuberculosis Suspects. L. Delherm.—p. 96.
Radiotherapy of Fibromas. G. Réchou.—p. 100.
Errors and Prejudices with Mechanotherapy. Sandoz.—p. 103.
Bedside Roentgen Examination. J. Chatelain.—p. 108.

Accidents from the Roentgen Rays.—Weil had charge of the preparation of this special number of the *Paris Médical*, devoted to physiotherapy, as he was an international authority on this subject, but the first page is devoted to his obituary. His recent untimely death was mentioned in the Paris Letter. His article heads the list of contributions, analyzing his personal experience as chief of the laboratory of electroradiology at the hôpital Trousseau. He calls "accidents" all modifications of the human organism not foreseen or not sought when the roentgen rays have been used, and he describes and classifies them under various headings. He says that it is important to bear in mind that any ulceration which develops without pain, at least during the period of its development, is not a roentgen ulceration. The rays may have been applied in treatment of some tuberculous or other lesion, and the latter may have progressed to ulceration. If the ulceration is not painful, the roentgen rays cannot be incriminated for it. There is not much danger of confounding a tardy roentgen ulceration with a tertiary syphilitic lesion, but this mistake has occurred in the past. The general disturbances, fever, toxemia and weakness during roentgen treatment of cancer are due to the efforts of the organism to throw off the products of the cancer, but nausea, vomiting and exhaustion may be from the ozone generated during the exposures. This assumption is sustained by the appearance of these symptoms sometimes in the nurses and attendants in the room.

Weil declares that the serious cutaneous lesions that develop soon after a series of exposures can be warded off by modern technic with almost positive certainty, but this cannot be said of cutaneous lesions that may develop tardily. Modern technic has reduced the chances of this to the minimum, but cannot guarantee against these distressing eventualities, not even with the most forewarned and careful radiologist, especially so long as our instruments for gaging the rays are only relative and so imperfect. Radiotherapy, like all active therapeutic measures presents a certain danger —although less than surgery, for he does not believe that any fatalities can be imputed to it. It would be a miracle if it were entirely free from danger. He prefers for tardy ulcerative radiodermatitis dressings with physiologic serum or polyvalent serum, covering with sterile gauze, smearing the skin around with a camphor salve and changing the dressings as seldom as possible. If alternation of simple measures fail, the healing process might be activated by the high frequency current or cauterization with hot superheated air, or carbon dioxid snow, which destroys the nerve terminals and replaces the atonic wound with a simple wound, or, perhaps better yet, excision of the ulceration, with Thiersch flaps. He warns that the laboratory must be well ventilated and large to eliminate the production of secondary rays which form on surfaces too near the tube. When a radiologist shows signs of roentgen injury, he should abandon the work entirely as the tissues have acquired an extreme hypersensibility to the rays and a special tendency to anaphylaxis, an indirect anaphylaxis. He refers to a recent compilation of 104 cases of roentgen cancer on radiologists, and warns that the makers of protecting devices do not always make them perfect, so that the protection is illusory. At the same time, he adds, radiologists are too apt to forget themselves in their zeal.

Traumatic Spondylitis.—Cluzet's roentgenograms confirm his statement that fracture of vertebrae and minor injuries of the spine may be followed by a tardy spondylitis more or less remote from the site of the trauma. This posttraumatic spondylitis in the six cases described was characterized by pain in the lumbar region, limitation of the movements of the trunk, and bony excrescences on the lumbar vertebrae at a greater or less distance from the seat of the trauma. The osteophytes are more localized and the spondylosis less pronounced than is the case with rheumatic affections of the spine. In another case a beak-shaped osteophyte had developed on the femur, just above the internal condyle, after a bullet wound of the thigh far above. The pain did not develop until four years after the injury, and there is reason to assume that the osteophyte had not developed until this time, although this cannot be proved. In one of the cases described, the osteophytes developed under the observer's eyes, and the pains developed with them. The pains and the stiffness were effectually combated with physiotherapy, massage, manual mobilization, functional training and electric treatment. In future he would apply radiotherapy if it proves to be a fact that the formation of the osteophytes accompanies the development of the pains.

Radiology of Tuberculosis Suspects.—Delherm relates that among the 1,100 men suspected of tuberculosis and sent to his *centre de triage* for confirmation, 694 proved to be exempt from tuberculosis. Others have reported that 50 per cent. of the suspects proved to be nontuberculous. Roentgen examination often turned the scale, the radiograms taken not only of the whole lung but of the suspicious points. Especially important is stereoscopy taken erect, in the course of the same apnea. When the apex looks suspicious, he leaves it and examines other parts of the lung, having the patient cough and breathe deep. Then when he returns to the apex he often finds that it has cleared up. Some people never aerate the apex fully. When the bronchi cast wide, pronounced shadows, usually bilateral, the presumption is in favor of ordinary bronchitis; with tuberculosis, with such findings there would be other signs of it in the lungs. With cancer of the lung, the subjacent lobe is clear, and the outline of echinococcus cysts is usually roundish and well defined. He has encountered one case of syphilis of the lung; the signs of infiltration under the right clavicle and positive physical findings were not accompanied by bacilli in the sputum, and rapid improvement followed specific treatment. After pleurisy, the base may look veiled, owing to symphysis, and the movements of the diaphragm may be hampered by adhesions, and the lung look gray in parts. The clearing up of the lung during respiration and coughing and the absence of foci of congestion in the subclavicular region are instructive. In other cases, however, nothing but the continued absence of tubercle bacilli from the sputum will finally exclude tuberculosis.

Feb. 15, 1919, **9**, No. 7

*Why Wounds Do Not Heal. G. Milian.—p. 129.
*Neuritis from Ischemia. E. Duhot.—p. 135.
*Fermentation and Reduction in Bacteriologic Diagnosis. A. Besson, A. Ranque and G. Senez.—p. 140.

Wounds That Do Not Heal.—Milian analyzes the reasons why certain wounds drag along without healing. One of the principal reasons is the failure to recognize the cause preventing the healing. Syphilis may delay the consolidation of fractures and the healing of superficial wounds. Extragenital soft chancre often fails of recognition. He gives an illustration of a case of giant soft chancres on the fingers and hand which had long been futilely treated on a mistaken diagnosis. Wounds may be kept from healing, intentionally by the patient, and unintentionally by the surgeon's abuse of disinfectants. Even hydrogen dioxid may be incriminated in this respect. The antiseptics which prevent or check healing may irritate the skin around, and this artificial dermatitis is far from exceptional, but is usually attributed to everything but the right cause. To prevent intentional irritation of the wound, the simplest means is to apply a large roller dressing and draw straight lines with ink down the front and sides with numerous crossbars. Any attempt to unwind the dressing is betrayed at once by the irregularity of these lines afterward.

Neuritis from Ischemia.—Duhot says that time has confirmed the possibility of neuritis developing when the nourishment and oxygen have been shut off from the region, and waste products accumulate. The optic nerve may suffer from the ischemia after severe gastric hemorrhages, and severe polyneuritis may develop after excessive losses of blood otherwise. Peripheral neuritis is usually traceable to injury of the axillary or brachial artery, the femoral at the base of the triangle of Scarpa, or the popliteal. The neuritis due to ischemia from this cause is usually accompanied by paralysis of the terminal type of distribution, with reaction of degeneration and possibly tendency to sclerosis later. The anesthesia is of the segmental and centrifugal type, and there may be causalgia. There are also usually trophic and vasomotor disturbances. In prophylaxis the vessels must be spared as much as possible in operating, etc. Hemostasis must be secured without total compression of the vessel. The ligature must be applied on a sound stretch and at a point where the clot will not obstruct the collaterals. Ligation of the vein along with the artery has proved its superiority, as this maintains the balance in the circulation.

Fermentation and Reduction in Differentiation of Bacteria.—Besson and his co-workers have become convinced that the complete differentiation of bacteria requires study of their action on sugars in a fluid medium. They tabulate the findings in this respect with twelve different bacteria and five kinds of sugar and also with mannite, dulcite and glycerin. Their research indicates that the aerobic bacteria can be classified in three great groups: those that are inert to sugar and alcohols; those that attack them but without production of gas, and those which attack sugars and alcohols with generation of gas. These main groups can be subdivided according to the sugar attacked. Reduction of neutral red also differs when sugar or gelose is added to a medium containing neutral red, and this occurs in a characteristic way useful in differentiation. They have found very useful what they call the "diagnostic tube B." The medium is made with 1 liter of "beef water" (*eau de viande de bœuf*); 4 gm. glucose, and 3 c.c. of a 1 per cent. aqueous solution of neutral red. This mixture is distributed in test tubes, each containing an inverted hemolysis tube which serves for a fermentation bell. The tubes are sterilized at 110 C. and can be inoculated with a loop of the culture or one drop of a fluid medium. In eighteen or twenty-four hours in the incubator the tube will show whether there is any reduction of the neutral red, acidification or alkalinization of the medium, the production or nonproduction of gas, and the approximate amount, and the varying phenomena from anaerobiosis in the bell. This tube allows the bacteria involved to be recognized almost at a glance by the characteristic changes evident in the tube. With the colon bacillus for example, there is fluorescence and a yellow tint, while the bell is half full of gas. With typhoid and dysentery bacilli, the fluid is purplish and there is no gas production. The findings exclude at once a large number of germs which otherwise it would take long to eliminate.

Presse Médicale, Paris

Feb. 10, 1919, 27, No. 8

*Diagnosis of Amebic Liver Disease. P. Ravaut and Charpin.—p. 65.
*Chronic Enteritis in Soldiers. J. Carles.—p. 67.
*Influenza and Epilepsy. G. Maillard and Brune.—p. 70.
Jugulo-Carotid Aneurysms. P. Aumont.—p. 71.

Amebic Liver Disease.—Ravaut and Charpin state that in a large proportion of twenty-one recent cases of amebic hepatitis in soldiers there was nothing in the previous history to suggest amebiasis. Fully half of the men had never presented dysentery, had never been out of France, had had no fever before and the stools were normal and free from amebas in any form, and yet an exploratory puncture revealed amebas colonizing in the liver. It is possible, they suggest, that the ameba induces a different clinical picture in a temperate climate from that in the tropics. No other assumption will explain the facts here related. Be this as it may, amebic hepatitis should be thought of whenever a patient presents signs of hepatitis, usually febrile, with a distinct painful point. The suspicion of amebic hepatitis can be confirmed by exploratory puncture or by the success of medical treatment. They have been most successful with a combination of an arsphenamin preparation and emetin. Under this, soon the pain and fever subside and the liver becomes reduced in size and the general health improves to complete restitution. Two of the patients had been labeled tuberculous on account of concomitant congestion of the lung, and some had been under treatment for malaria. In a few weeks they witnessed an actual resurrection. In conclusion they warn physicians not to allow themselves to be surprised by amebiasis when this medical treatment will not only confirm the diagnosis but cure the patient as well. In a typical case reported the patient was given ten intravenous injections of 0.3 gm. of French neo-arsphenamin at six day intervals and eighteen injections of from 0.04 to 0.08 gm. of emetin—all in the course of forty days.

War Enteritis.—Carles describes eight different forms of chronic intestinal disease common in the soldiers returning from the different seats of war. Each requires special treatment, and he epitomizes the means for differential diagnosis and treatment. According to the special parasite involved the disturbances subside under emetin, sulphur, thymol, turpentine, or male fern. In exceptional cases the enteritis may be a sequel of paratyphoid or bacillary dysentery; the rectocolic ulcerations require local measures along with vaccine and serotherapy. Test meals will reveal a functional digestive insufficiency and suggest the treatment. The enteritis may be due to abnormal fermentation or be an actual intestinal neurosis, an "abdominal sympathosis," requiring prolonged local and general treatment.

Influenza and Epilepsy.—Maillard and Brune noticed in the service for epileptics at the Bicêtre hospice that no seizures occurred during the course of intercurrent influenza. The seizures returned as before after recovery from the influenza, but this inhibiting effect from the latter was striking and should encourage research along similar lines. They were impressed further by the exceptional gravity of the influenza among the epileptics; there were thirty-two deaths in the sixty-three cases; two other deaths could not be atributed directly to the influenza. They remark, *Les épileptiques sont des congestifs,* and hence a disease tending to induce further congestion is particularly serious for them. None of the inmates of the hospice who had influenza during the June epidemic contracted it anew during the October wave.

Feb. 13, 1919, 27, No. 9

*Leprosy at Marseilles. L. Perrin and G. Brac.—p. 77.
Examination of Vision of Aviators. A. Cantonnet.—p. 78.
*Anesthesia for Operations on Face and Neck. L. Dufourmentel.—p. 79.
*Autoserotherapy of Meningitis. J. Abadie and G. Laroche.—p. 82.

Leprosy in France.—Perrin and Brac examine for traces of leprosy all colonial troops arriving at Marseilles. They have been able to detect the disease thus in its very earliest manifestations. In some cases there was merely depigmentation of the skin at various points, giving the body a piebald aspect although the visible portions of the skin were apparently normal. One robust negro had one shoulder, the upper arm and half of the back form a white area in sharp contrast to the ebony skin around. Fifty men with incipient leprosy have been detected among the troops or working in factories, and have been repatriated. The leprosy had escaped detection when they entered the country. In some cases the only manifestations are a few tubercles, usually grouped in a circle on a zone of erythema; sometimes the lesion is scarcely larger than a silver quarter, and differentiation from syphilids and tuberculids is difficult. The increase in size of the ulnar nerve and the disturbances in sensibility confirm the diagnosis, but the sensibility may be variable and conflicting. Persistence of sensation does not exclude leprosy. Sometimes there is dissociate sensibility. One man with far advanced leprosy showed only large achromic patches on the body although the ulnar nerves were enlarged, with symptoms of neuritis in the arms, atrophy of groups of muscles and, finally, gangrene of the left leg. They warn in conclusion that persons even with the initial manifestations of leprosy are liable to spread the germs broadcast.

General Anesthesia for Operations on Face and Neck.—Dufourmentel concludes from his own experience and that of others that ether anesthesia by the rectum is the best method of anesthesia for children and for debilitated adults and for the tuberculous. It does not induce anesthesia in healthy adults as a rule. He insists that pure ether does not irritate the rectal mucosa, and hence there is no need to mix it with other substances. He uses about 2 c.c. of ether per kilogram injecting it through a Nélaton catheter of hard rubber, the catheter inserted for 10 or 15 c.c. It is then left in place, the outer end clamped, in order to facilitate evacuation of the ether at need. Inhalation of a few drops of ether or chloroform hastens and completes the anesthesia. The ideal anesthesia for operations on face and neck is by inhalation through a laryngotomy opening. His experience has confirmed more and more the advantages of this method.

Pyocyaneus Meningitis.—Abadie and Laroche cultivated the pyocyaneus from the spinal fluid of a young soldier with meningitis, and relate that they cured him by intraspinal injection of 3 c.c. of the patient's own serum, repeated thirteen days later.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 25, 1919, **49**, No. 4

*Tuberculous Abscesses in Wall of Chest. H. Iselin.—p. 97.
*Chronic Nontuberculous Tendovaginitis. A. Vischer.—p. 103.
*Intranasal Removal of Lacrimal Sac. A. Affolter.—p. 115.

Tuberculous Abscesses in Chest Wall.—Iselin asserts, on the basis of his experience with 177 cases of tuberculous lesions in the chest wall, that it is not absolutely indispensable to resect the rib involved. This was the routine practice at the Basel clinic until the last few years have demonstrated that such lesions may retrogress under roentgen exposures. His prolonged study of his 177 cases has convinced him that the ribs are involved only secondarily. In 98 operative cases, sequesters or a probably primary bone lesion were found in only 6 cases, and the ribs were involved in only 3 of them, and in one of these the patient was a syphilitic. The fistulas ran in various directions, and the attempt to trace them to their source entailed the danger of opening the pleura. The success of roentgen treatment confirms further that the abscesses and fistulas are not connected with production of sequesters. Even the smallest sequester renders conservative treatment futile, but he has had 56 complete cures among the 77 cases in which systematic roentgen treatment was applied. In 16 of the 21 cases in which it failed, there were progressive tuberculous lesions in the lungs or elsewhere to which the patients succumbed. If the bone had been involved, roentgen treatment could not have cured 56 out of 77 cases with prompt and smooth recovery. In only 3 cases were the roentgen findings suspicious of primary tuberculosis. In 16 of 41 cases, there was a history of pleurisy, and in 14 of these cases the abscess in the chest wall developed after puncture of a pleural effusion, but not at the site of the puncture. The abscess was more of the nature of a gravity abscess, traceable to pleurisy, pericarditis or tuberculous glands. Tuberculous lymphangitis may set up multiple fistulas but the ribs are only exceptionally involved. Otherwise treatment should be conservative: aseptic puncture and evacuation, injection of iodoform or camphor and phenol, with roentgen exposures, heliotherapy, arsenic, iodin or inunctions. Not much can be anticipated from any treatment with a progressive pulmonary lesion in addition.

Nontuberculous Tendovaginitis.—Vischer remarks that the clinical picture interpreted as the result of stenosis from an inflammatory process in the tendon sheath has gradually obtained anatomic sanction and basis. The thickening of the wall of the tendon sheath narrows the lumen and binds the tendon, and the resulting disturbances demand operative relief. This is easily realized by simply slitting the tendon sheath. This puts an end to all trouble from this source. The thickening of the tendon sheath may be due to excessive functional demands, to rheumatism or to gout, or to a combination of these.

Intranasal Transseptal Dacryocystectomy.—Affolter shows in four illustrations how he obtains access through the nose to the lacrimal sac by resecting the lower portion of the septum, as for correction of deviation. The lacrimal sac is then easily reached with the instrument introduced into the opposite nostril and passed through the gap in the septum to the sac. A large number of patients have been operated on in this way, with complete success and without visible scar.

Policlinico, Rome

Feb. 2, 1919, **26**, No. 5

*Extinction of Focus of Trichinosis. G. Volpino.——p. 129.
*Postinfluenzal Immunity. D. Falcioni.—p. 133.
Antiserum Treatment of Tetanus. V. Grossi.—p. 139.
*Double Resection of Intestine. P. Pacchini.—p. 142.
Empyema with Expulsion of Scraps of Lung Tissue. P. Perazzi.—p. 144.

Rarity of Trichinosis in Italy.—Volpino relates that a hog with trichinae at Bergamo two years ago infected those who had eaten the meat, as also some dogs and rats, and a second hog was found infected at a point several miles distant. It had been previously affirmed that domestic animals in Italy were immune to trichinosis, and this focus of infection seemed to become spontaneously extinct in the region, as no animals, rats or dogs have shown any traces of trichinosis since.

Postinfluenzal Immunity.—Falcioni mentions among other significant happenings that a certain orphan asylum at Rome had escaped the epidemic of influenza until Jan. 2, 1919, when 100 of the 120 inmates developed the disease within three or four days. Of the twenty who showed no symptoms of it, sixteen had been recently orphaned by the death of their parents from influenza, and two others had had the disease at another asylum a few months before. Out of the entire 120 there were two who seemed to possess a natural immunity. There have been three waves of the epidemic at Rome, and each time it seemed to spare those who had had the disease before.

Double Resection of Intestine.—Pacchini operated twenty hours after a gunshot wound of the abdomen and found it necessary to resect two segments of the small intestine. A total of 1.5 meters was thus removed, requiring two entero-anastomoses. Notwithstanding the acute visceral peritonitis and lesions of mesenteric vessels, smooth recovery followed, the bowel functioning apparently regular, and the young man has regained his former weight.

January, 1919, **26**, Medical Section No. 1

*The Law of the Heart. A. Murri.—p. 1.
*Arrhythmia in Malta Fever. G. V. Ferralis.—p. 18.
Titration of Complement for Wassermann Test. B. Frattini.—p. 23.
*Typhoidal Hemiplegia. E. de Sarro.—p. 32.

The Law of the Heart.—This is the title of a recent work by E. S. Starling, and Murri recalls his own publications on this subject thirty-two years ago based exclusively on clinical findings, while Starling's work is based to a large extent on experimental research. Murri's findings were on abnormal hearts; he began therefore where Starling's law leaves off, at the limits of the normal. His experience therefore justifies amplifying Starling's law to the effect that while distention of the fibers of the sound myocardium increases the force of its contraction, with a diseased myocardium, however, the effect is to increase the number of insufficient contractions. He insists that the dilatation is the origin of the higher pulse rate, while Lewis and certain others regard the increased pulse rate as the origin of the dilatation. Murri quotes Pratt's article on "Digitalis Therapy," in The Journal, Aug. 24, 1918, saying that Pratt's conclusions confirm his own publications of twenty-one years ago.

Arrhythmia in Malta Fever.—The arrhythmia was of the complete sinusal type in the boy of 14 with Malta fever. The heart action became regular once more as he recovered.

Typhoidal Hemiplegia.—De Sarro's two patients were a young woman and a girl of 14 and both developed hemiplegia in the course of typhoid fever, on the right side in the girl, accompanied by aphasia. In the other the onset was with a convulsion, followed by hemiparesis and then hemiplegia but no signs of meningitis. The hemiplegia gradually retrogressed in the course of two months. In the girl the paralysis with contracture and the aphasia do not show much improvement to date. De Sarro compares with these two cases similar experiences from the literature. The sudden onset, the abrupt drop in the temperature, the aphasia, and the symptoms in general seem to point to an embolism in the left Sylvian region in the younger patient.

Riforma Medica, Naples

Jan. 25, 1919, **35**, No. 4

*Uremia. S. Livierato.—p. 65.
*Plastic Motor Operations. G. Vanghetti.—p. 71.

Uremia.—Livierato discusses the significance of azotemia for the diagnosis and the prognosis, as ascertained in sixty-three patients with various diseases. His findings are compared with those of others in this line. The highest degree of uremia was found always in the cases of nephritis. The six cases with the highest figure all terminated fatally; the range was from 0.86 to 1.90 per thousand in these cases. But one patient with chronic nephritis and 1.25 per thousand urea in the blood materially improved, and in some other cases of chronic nephritis the urea content of the blood was within normal range. The patients in this group all improved. The routine determination of the urea content of the blood revealed uremia in some cases in which, at the time, there was nothing otherwise to indicate retention of urea. This confirms Widal's statement that there is no absolute relation between the symptoms of azotemia and the degree of retention of urea. Livierato's fatal cases of nephritis with low uremia show that the prognosis may be grave even when the urea content of the blood is below that which is generally regarded as the limit of tolerance. This conflicts with Widal's classification of the cases as doomed to a fatal termination in a year with urea content of 1 or 2 gm., and within a few months or weeks with 2 or 3 gm. Livierato regards the outlook as grave with from 0.5 to 1 per thousand, but in his experience some of the patients in this class took a turn for the better, and some seem to have entirely recovered.

Plastic Motor Operations.—Vanghetti discusses this subject from the theoretic point of view and pleads for construction of artificial limbs "aiming at the greatest possible autarchy," as he expresses it, "not a pseudo-automatism." He suggests that it might be advisable to train cripples in a certain part of the work of making artificial limbs. What he calls "mixed cine-prostheses" seem to be the prostheses of the future, but it requires brains to design them and brains and study to adapt the amputation to this future function.

Feb. 8, 1919, **35**, No. 6

*Report on Pola Expedition. R. Paolucci.—p. 105.
*Pathogenesis of War Psychoneuroses. G. Pellacani.—p. 111.
Arthritism as an Infection. A. Ferrannini.—p. 116.
Differential Diagnosis of Appendicitis. T. Hernando.—p. 118.

Official Report of Naval Medical Officer.—This is the official report on the exploit in which the young navy surgeon, Paolucci, with one companion, harnessed a torpedo and rode it under harbor nets and through fields of mines and blew up the last of the five cruisers with which Austria entered the war. As some one said of the charge of the Light Brigade, *C'est magnifique mais ce n'est pas la guerre,* so the exploit of this medical hero of Pola *est magnifique mais ce n'est pas la médecine,* and consequently it cannot be given space in these columns.

War Psychoneuroses.—Pellacani insists that pithiatism, in Babinski's sense, forms part of hysteria, but that it is by no means all of hysteria, and this fact is particularly evident in war psychoneuroses as he explains. The essence of hysteria is the psychogenesis of the symptoms, and the essence of the psychogenesis is the susceptibility to suggestion. He emphasizes the necessity for drawing a sharp line of distinction between the emotional trauma, the emotive neurotraumatism with a neuropathic set of symptoms and a posttraumatic psychopathy, on the one hand and, on the other, the psychic factors (representative—emotional—suggestion—hysterogenous: psychogenesis) and the metatraumatic psychoneurotic set of symptoms. The two sets of symptoms may be associated, but the distinction between them is precise and essential, and it should be maintained to avoid continuous error and confusion.

Anales de la Facultad de Medicina, Lima

November-December, 1918, **1**, No. 6

*Echinococcus Cyst of Liver. E. Odriozola.—p. 159.
Borates in Waters of Arequipa District. M. A. Valesquez, E. Escomel and A. Maldonado.—p. 165.
Early Psychology in Peru. H. Valdizan. Cont'n.—p. 173.
*False Gallstone in Stomach. J. V. Bernales.—p. 196.
Psychanalysis. H. F. Delgado.—p. 202. Cont'n.

Echinococcus Disease of the Liver.—The first revealing symptom in Odriozola's case was jaundice coming on suddenly and intensely. There had been a few periods of malaise during the preceding months with vomiting and lassitude, and the onset of the jaundice was accompanied with transient intense pruritus. The jaundice had persisted for over two years, and the young man complained of oppression in the right hypochondrium, but there was no tendency to fever at any time and no pains to suggest gallstone mischief, although the stools were continuously clay colored. The absence of eosinophilia and the negative Wassermann reaction and absence of history of syphilis justified an exploratory laparotomy. This was done at the close of the third year, and a cystic tumor was disclosed on the concave aspect of the left lobe of the liver. The tumor was 15 by 9 cm. in diameter and 5 cm. thick, and its deep location rendered it extremely difficult to reach. The patient succumbed to hemorrhage in the depths the third day. The liver weighed 3,000 gm. and measured 36 by 24 and 8 cm. There had never been any pain from it, and nothing could be palpated that suggested a tumor. The jaundice was evidently due to compression of the bile duct by the tumor.

False Gallstone in the Stomach.—Bernales' patient was a man of 40 who for two years had been having acute pain at times in the stomach at intervals of four or five days, with no connection with the food. Each attack was accompanied with eructation and vomiting, with sometimes traces of blood. Giving up all work after five months of these attacks banished them completely during the eight months of rest, but the pains returned as severe as ever when he returned to his work as a miner. The attacks became more severe and returned daily, the pain always located in the stomach or radiating to the left hypochondrium, and it did not yield even to morphin. The stomach was opened and a calculus was removed which seemed to be a gallstone, about 2½ inches by 1½ wide, shaped like a potato. This calculus was formed of a clot of blood, almost organized, coated with bile pigments.

Archivos Españoles de Tisiologia, Barcelona

January, 1919, **1**, No. 1

*Action of Tuberculin on the Blood. F. Mas y Magro.—p. 1.
Defensive Ferments in Tuberculin Treatment. R. Dargallo.—p. 79.
*Mitral Stenosis and Pulmonary Tuberculosis. J. V. Montenegro.—p. 89.
Diffuse Tuberculous Cellulitis. A. C. Lladó.—p. 97.
*Roentgen Findings in Tuberculous Lung. L. Sayé.—p. 105.

Importance of Color Index and Differential Blood Count as Guide for Tuberculin Treatment.—Mas y Magro's extensive study of the influence of tuberculin on the blood and blood-producing organs is the first article in this handsome new journal which herewith enters the scientific arena. It is to be published three times a year, with possibly supplements at shorter intervals, the whole to form a volume of about 600 pages. The annual subscription is 30 pesetas, about $6, and Dr. L. Sayé, Aragon 282, Barcelona, is the editor.

Mas y Magro reports that tuberculin modifies constantly and profoundly the blood and blood-producing organs. These modifications pass through three phases, the blood first tolerating, then showing signs of saturation, and then, finally, of toxic action. Each of these phases can be readily estimated from the color index and the differential blood count, as he explains in detail. The febrile reaction occurs only when the stage of saturation or toxic action is reached. The differential blood count and the color index will thus enable us to guide tuberculin treatment so as to keep it just short of inducing the harmful febrile reaction. His research was done on twenty-two guinea-pigs besides extensive clinical experiences. The differential counts day after day are given and the histologic findings in the animals at different intervals. The constancy of what he calls the basogranular reaction after the first injection of tuberculin was *striking* in all the animals and in the four healthy adults tested, in twelve afebrile tuberculous patients, and in three febrile patients with leukocytosis. This reaction indicates, he reiterates, a toxic influence on the blood-producing apparatus from the very first and with remarkable promptness. In all his investigations of the action of different substances on this apparatus, he has never found one so prompt and constant in its action as tuberculin. It is not surpassed even by lead and, much less, by molybdic acid.

When the tuberculin is well tolerated the color index declines. In the saturation phase it keeps stationary, and it runs up in the toxic phase. When the stationary color index denotes that the stage of saturation has been reached, a very minute dose of tuberculin will suffice to transform it into the toxic phase. The curve of the color index, taken twenty-four hours after the therapeutic dose, will thus serve as a guide for the next dose, and we can thus ward off any febrile reaction. When the injections are continued after the blood findings show that the toxic stage has been reached, symptoms of a general toxic order soon become apparent, loss of appetite and weight, prostration, etc. The color index alone seems to be a most exact and sensitive guide for tuberculin treatment, while it does not require much technical skill to divide the percentage of hemoglobin by the percentage of red cells as compared with the recognized normal, namely, 5,000,000, to determine the color index.

Mitral Stenosis and Pulmonary Tuberculosis.—Montenegro relates that in his 20,000 cases of pulmonary tuberculosis he encountered only one case in which active pulmonary tuberculous lesions were accompanied by mitral stenosis. This is a proportion of only 0.005 per cent. and justifies the general assumption that mitral stenosis is an obstacle to the development of pulmonary tuberculosis. Even this one case in his experience tends to prove this because the pulmonary lesions kept mild even during the woman's two pregnancies. He adds that this was the only patient with pulmonary tuberculosis among his 300 cases of mitral stenosis. It formed thus 0.3 per cent.

Roentgen Findings in Pulmonary Tuberculosis.—Sayé gives five fine roentgen plates and interprets the findings in twenty-five cases. He follows this with a study of the anatomy and clinical findings with pulmonary tuberculosis in general, comparing the four great types, the cheesy, the fibrous, the fibrocheesy and the miliary, and their findings, the heredity with each, the initial and later symptoms, the roentgen findings in different phases, the complications and duration. He appends thirteen solidly printed pages of bibliography on various phases of phthisiology published in the last two years.

Brazil-Medico, Rio de Janeiro

Dec. 28, 1918, **32**, No. 52

*Myxosporidia in Brazilian Fishes. A. M. Da Cunha and O. Da Fonseca.—p. 414. Cont'n.
*Chart for Recording Gynecologic Data. J. Adeodato.—p. 414.

Myxosporidia in Brazil.—Da Cunha and Da Fonseca have been publishing each week descriptions of new species derived from Brazilian fishes.

Palpation of the Vagina.—Adeodato gives an illustration of a diagram in the form of a circle barred off like a compass into eight portions on which he records the findings of palpation of the vagina and internal genitals. Each division corresponds to some part of the field under examination: To the north, the bladder, the anterior surface of the uterus and the cervix; to the south the pouch of Douglas and the rectum; to the west the parametrium and the right tube; the right ovary to the southwest; to the northwest the right round ligament. Recording the data by this means shows the relation between the findings, impresses them on the memory, and has proved extremely useful in his experience.

Revista de la Asoc. Med. Argentina, Buenos Aires

November, 1918, **29**, No. 168

*Antibodies in Leukocytes of Immunized Animals. A. Bachmann.—p. 549.
History of Public Hygiene in Argentina. E. R. Coni.—p. 574, Cont'n.
*Postoperative Obliteration of Mesenteric Vessels. P. Escudero.—p. 625.
*Tracheobronchial Glandular Disease in Children. J. P. Garrahan and O. S. Dastugue.—p. 643.
*Cyst in Lower Jaw. J. M. Jorge (h.) and J. Layera.—p. 662.
Tuberculosis. J. J. Vitón.—p. 690. Cont'n.

Immunization to Infections.—Bachmann expatiates on the highly important specific property acquired by the leukocytes in the course of an infection or inherited. This property is not much modified even by the death of the leukocytes; it is possible to immunize small animals with the killed immune leukocytes, but larger quantities are required than with the living leukocytes. The plasma alone does not have this immunizing action. The specific property possessed by the leukocytes does not pass into the serum at the moment of coagulation, but it can be obtained in the serum by treating the leukocytes with congelation, according to Buchner's technic, thus transforming the fluid in which the cells are suspended into a preventive antiserum. By this means we practically isolate the substance which confers the immunizing property on animals and man. Bachmann explains that it is found exclusively in the polynuclears of immunized individuals, and it saves others from infection with spontaneous or induced infection. These specific substances have been called leucines and endolysins, and he has found them effectual not only in immunizing guinea-pigs against infection from microbes injected intraperitoneally but also in aiding to cure already established infection. By heating the well diluted endolysins to 75 C. in the presence of a little gelatin, the common bactericidal properties of the leukocytes were destroyed while the specific immunizing property did not seem to be impaired. Small animals injected with the leukocyte immune products, one hour after inoculation with the infectious germs, all survived, while all died of those injected merely with ordinary leukocytes or plasma or both; the infection running the usual course as in the controls. Bachmann reiterates that his success in getting rid of the bactericidal element of the endolysins leaves the specific immunizing substances free to exert their action. Their constitution seems to be analogous to that of the antibodies in the serum, but it seems to be a more stable specific element than the serum antibodies, and this has permitted its isolation. The research was done mainly with anthrax, but the results were confirmed with typhoid infection. He reiterates that these facts complete the cycle of transformation undergone by the leukocytes in acquired immunity. His article is in French.

Postoperative Obliteration of Mesenteric Vessels.—Escudero has found records of 360 cases of postoperative thrombosis of the mesenteric vessels up to the year 1913. The correct diagnosis has been made only in thirteen of the total 360 cases. In his own experience with three cases the mesenteric thrombosis proved fatal in two within three days after an operation for chronic appendicitis or adhesive perienteritis. In the third case there was an interval of a month after the laparotomy for acute appendicitis before the thrombosis developed and proved fatal in two days. The diagnosis wavered between acute hemorrhagic pancreatitis and mesenteric thrombosis, but the operation twenty hours after the first symptoms confirmed the latter; ascending venous thrombosis from the primary focus was evidently responsible. In the two other cases the vessels showed signs of syphilitic changes, confirming the frequency of syphilis as a factor in postoperative mesenteric thrombosis. The vessels are already so pathologic that even the slightest superposed element is sufficient to induce the thrombosis. The clinical picture may include intense pain, rebellious to morphin, tympanites around the umbilicus, developing about six hours after the operation, profuse gastric hemorrhage, pulse up to 120 or 160, with cyanosis, restlessness and insomnia, all developing within twenty-four hours. Another laparotomy is the only means of salvation, and this only when done in time and the lesions are not already irreparable.

Diagnosis of Tracheobronchial Glandular Disease in Children.—Garrahan and Dastugue found the tuberculin reaction positive in 79 of 115 children suspected of tuberculosis, the proportion increasing regularly from 48 per cent. between 2 and 6 to 95 per cent. between 11 and 13. In a number of the children presenting pronounced physical signs, there was nothing in the roentgen picture to suggest glandular involvement. On the other hand, some of the children free from physical signs of tuberculosis showed distinct roentgen findings with enlarged glands. The tuberculin reaction also did not always correspond with the roentgen and physical findings. In 41 children with little or no signs of glandular involvement, the tuberculin reaction was positive in 39 per cent. as also in 85 per cent. of the 74 with evidences of tracheobronchial glandular disease. These experiences confirm the inadequacy of percussion and auscultation in detecting tracheobronchial glandular disease.

Cyst in Lower Jaw.—Jorge and Layera remark that the rapid and complete recovery in the case of dentiferous cyst reported confirms the advantages of the technic applied. The patient was a man of 37 and the outer wall of the cyst was respected. They merely opened up the cyst widely and kept it open for forty-eight hours. The cavity was then tamponed after touching the walls with tincture of iodin. In forty-eight hours the tampon was removed, the cavity was rinsed out repeatedly with a mild antiseptic, and the patient kept on fluid food for two weeks. The bone has regenerated during the months since, aided by the refraining from resection of the wall.

Revista de Medicina y Cirugia, Havana

Jan. 25, 1919, **24**, No. 2

*The Pandemic of Influenza. M. R. Casabó.—p. 29.
*Anti-Influenza Bacterin. A. Recio.—p. 35.
*Post Influenzal Amblyopia. A. F. Oñate.—p. 53.
*Tardy Hemorrhage after Removal of Adenoids. H. Seguí.—p. 55.

Influenza.—Casabó reports encouraging success in treatment of influenza with a vaccine made from the sputa and secretions in some grave cases of influenza. With the germs thus derived, a vaccine and a bacterin were prepared, and in thousands of applications he never heard of a mishap.

Recio describes the technic by which this polyvalent, mixed anti-influenza bacterin was made. Agar with human blood was the culture medium, and as the microbes are used as primarily developed, there is greater chance, he says, that the bacterin contains the unknown virus responsible for the influenza than those prepared by other technics. They have distributed 10,000 doses (four ampules each), and have had most favorable reports of its prophylactic action. In one group of 300 persons thus vaccinated only five developed influenza and two of these had had only one and the other two doses, instead of the routine four. In the two other cases the influenza developed six weeks after the vaccination but ran a very mild course. None of 100 children thus vaccinated at the height of the exceptionally severe epidemic at Camagüey contracted the disease.

Postinfluenzal Amblyopia.—Oñate's two patients who developed amblyopia after influenza were a dentist and a merchant of 65. The influenza in the first mentioned was of severe gastro-intestinal type, in the other of the pneumonia type. The ophthalmoscopic findings and the urine were normal in both, and the progressive amblyopia was evidently of toxic origin. Oñate ordered the first patient to refrain from meat, taking mostly milk and purées of vegetables, with Bulgarian bacilli and a mild laxative. Under a week of this, vision in one eye returned to normal, and by the end of the second week also in the other eye. The man had been having an intense urticaria with the amblyopia, and this subsided with it. In the second case the same treatment was given, with sodium iodid internally in addition, with equally prompt success.

Severe Hemorrhage After Removal of Adenoids.—Seguí's case teaches the necessity for repose after an operation on the throat. Only the most urgent measures, packing the entire cavity, succeeded in arresting the severe hemorrhage which had already induced a syncopal condition. After the adenoids had been removed, the mother was told to take the boy of 12 home in her automobile and put him to bed, or at least make him lie down. But instead of this the pair went shopping, and the alarming hemorrhage came on the third hour. Seguí refers also to a similar tardy hemorrhage in an adult after removal of relics of adenoids. All warn of the necessity for keeping in bed for twenty-four hours at least after any operation on the throat. In none of the cases was there any suspicion of hemophilia.

Semana Medica, Buenos Aires

Jan. 2, 1919, **26**, No. 1

Influenza at Rio de Janeiro. F. S. Guasch.—p. 2.
*The Islands of Langerhans. P. J. García.—p. 6.
*Syphilitic Sterility and Amenorrhea. G. Giacobini.—p. **14**.
School Lunches. E. R. Coni.—p. 16.
State Care of the Hospitals and the Public Health Service in Latin American Cities. I. Colombia. C. Solano R. (Bogotá).—p. 19.

The Islands of Langerhans.—García declares that the islands form part of the internal secretion system. The pancreas thus has two cycles of secretion, an internal and an external. Comparative anatomy and embryology confirm this view, and show further that the acini and the islands of Langerhans become reversible in time. There is much to sustain the assumption, he says, that the secretion of these islands is what controls the metabolism of sugar.

Syphilitic Amenorrhea.—Giacobini cites some cases from his experience which confirm that syphilis alone may be responsible not only for sterility but for amenorrhea and the premature menopause.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 4, 1919, **1**, No. 1

*Herman Boerhaave, 1668-1738. E. C. van Leersum.—p. 1; —p. 85; —p. 100.
Boerhaave as Man and Chemist. E. Cohen.—p. 13.
Boerhaave as Historian of Nature. F. W. T. Hunger.—p. 36.
Boerhaave and Ophthalmology. W. P. C. Zeeman.—p. 44.
*Boerhaave as Lecturer. E. C. van Leersum.—p. 50.
Portraits of Boerhaave. J. P. K. de Zwaan and others.—p. 77.
Boerhaave and the University. J. E. Kroon.—p. 87.

Boerhaave.—The entire issue of the *Tijdschrift* is devoted to this great physician of the seventeenth century in memory of his birth, 250 years ago, Dec. 31, 1668. A number of illustrations accompany the different articles, with reproductions of letters and other documents, including Van Swieten's shorthand notes of Boerhaave's lectures. Van Leersum has been studying these notes for years and gives the transcription of them. The lectures were in Latin and the notes cover a period of several years, including the latest lectures. An exhibition of Boerhaaviana was held at Leyden and the anniversary was formally celebrated with much ceremony.

Jan. 11, 1919, **1**, No. 2

*Pathogenesis of Gastric Ulcer. C. D. de Langen.—p. 178.
*Influenza. E. Bemelmans.—p. 184; A. Cijfer.—p. 187.
Diagnosis of Acute Appendicitis. A. Van Balen.—p. 188.

Pathogenesis of Gastric Ulcer.—De Langen discusses gastric ulcer from the standpoint of clinical medicine, emphasizing its extreme rarity among the natives of Java. It seems to be rare also in Japan. Examination of the stomach findings in thirty-five persons at Batavia, healthy or with malaria or other disease, failed to show any deviation from the normal figures in respect to acidity. On the other hand, the predominance of sympathecotony in the tropics and the absence of vagotony confirm the theory that vagotony is the main factor in gastric ulcer, and that the rarity of vagotony in the tropics is responsible for the rarity of gastric ulcer. De Langen's research on the higher tonus in the sympathetic nervous system in the tropics was summarized in these columns, Oct. 26, 1918, p. 1447. The facts observed apparently confirm the vagotonic origin of gastric ulcer.

Influenza.—Bemelmans says that the success of arsphenamin in curing contagious pleuropneumonia in horses justifies its use in influenza. The disease in man and in the horse seems to be etiologically, bacteriologically and epidemiologically identical he declares. Arsphenamin has been used on a large scale for pleuropneumonia in horses during the war, he says, "striking quick and striking hard." A single intravenous injection seemed to save the horse. Alexander has recently reported that he has never seen influenza develop in persons who have recently been given some arsphenamin preparation. In conclusion, Bemelmans cites some writers who have reported benefit from arsphenamin in scarlet fever, typhus, eczema, and adenitis in horses and in pneumococcus infection. For horses, it has been found that the exact dose is extremely important. Bemelmans declares that the proper dose, given as soon as there are signs of serious complications in lungs or elsewhere, would undoubtedly have as favorable an action in man as in the horse.

Hygiea, Stockholm

Jan. 14, 1919, **81**, No. 1

*Transvesical Prostatectomy. G. Ekehorn.—p. 1.

Transvesical Prostatectomy.—Ekehorn reports that the ultimate outcome in his 120 cases of transvesical prostatectomy was highly gratifying in all but five cases. These cannot be considered a perfect success like the others. He classifies the various degrees of disturbance from the enlarged prostate, and the results realized by the transvesical prostatectomy.

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THE COMPLEMENT FIXATION TEST IN THE DIAGNOSIS OF TUBERCULOSIS

A CLINICAL AND LABORATORY STUDY *

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Not all of the reports on the complement fixation test in the diagnosis of tuberculosis have recorded the high degree of accuracy that Craig[1] and Miller[2] ascribe to it. This is in large part due to the fact that the method of performing the test has not as yet been standardized. But even with a uniform technic, the results of different observers would not have the same high percentage of agreement with the clinical diagnosis as obtains with the Wassermann test in syphilis. This is due to the many difficulties that beset the clinician in classifying his tuberculosis patients. The man whose diagnostic zeal is greater than his experience will detect tuberculosis where none exists, and even those of large experience differ as to when a case should be termed "arrested" and when "cured." No more puzzling problem confronts the internist than to decide whether there is any relation between the vague toxic symptoms that a patient presents and the old and apparently healed tuberculosis which the examination reveals. It is in such cases that the clinician looks to the laboratory for help. Will the complement fixation test as now performed fill the want?

At this time it does not seem necessary to us to review completely the literature, as this has recently been well done by Moon,[3] von Wedel,[4] and Stivelman.[5] Therefore, aside from a summary of the subject, only those articles which have appeared since these reviews will be discussed in any detail.

The first investigators to use the complement fixation test for the diagnosis of tuberculosis appear to have been Widal and LeSourd,[6] followed by Bordet and Gengou,[7] Wassermann and Bruck,[8] Caulfield,[9] Laird,[10] Hammer,[11] Calmette,[12] and a host of others, with varying success.

Miller,[2] using a bacillary emulsion as an antigen, reports nearly 100 per cent. positive results in active cases of tuberculosis, and 100 per cent. negative results in known nontuberculous cases. Craig,[1] using an alcoholic extract of tubercle bacilli, found 92.6 per cent. positive complement fixations in active cases, and 66.1 per cent. positive in inactive cases. In 150 cases with a positive Wassermann test and no demonstrable lesion in the lung, the reaction was negative. One hundred cases of diseases other than syphilis and tuberculosis were all negative. He regards the test as one of established reliability. Burns, Slack, Castleman and Bailey[13] obtained similar favorable results.

Opposed to such favorable reports is the work of Corper[14] and Corper and Sweany,[15] whose results were not constant and who found many cross fixations with positive Wassermann serums.

Wilson[16] emphasizes the importance of examining each guinea-pig serum for its complement value and especially its fixability with tuberculosis antigen and tuberculous serum. This is recommended even in a pooled complement. A lipoid-free bacillary antigen is also described in which the tubercle bacilli are grown on glycerin broth, the cultures filtered, and the lipoids extracted from the organisms recovered from the filtration with alcohol and ether. The dried organisms are then emulsified in salt solution. This is a preliminary report on technic and does not include any case reports.

Von Wedel,[4] using the Wilson antigen, reports a very successful series of cases. He makes the interesting observation that many serums from known tuberculous cases show a negative reaction immediately after bleeding, but if kept in the refrigerator five or six days under sterile conditions, they become positive. He states that this does not occur in known nontuberculous cases. He obtained 100 per cent. negative results in known nontuberculous cases, nearly 100 per cent. positive results in primary and active tuberculous cases, and 25 per cent. positive results in the partially active and inactive cases. As for moribund patients, the showing was usually negative. He emphasizes the importance of pooling the serum of at least six guinea-

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* From the Laboratory and Tuberculosis Services of the Walter Reed General Hospital.

[1] Craig: Am. J. M. Sc. **150**: 781, 1915.

[2] Miller, H. R., and Zinsser, J.: Proc. Soc. Exper. Biol. & Med. **13**: 134, 1916. Miller, H. R.: Application of the Complement Fixation Test to Tuberculosis, J. A. M. A. **67**: 1519 (Nov. 18) 1916.

[3] Moon, V. H.: A Further Consideration of Complement Fixation in Tuberculosis, J. A. M. A. **71**: 1127 (Oct. 5) 1918.

[4] Von Wedel, H.: J. Immunol. **3**: 351-369, 1918.

[5] Stivelman, B.: Am. Rev. Tuberc. 546-550, 1918.

[6] Widal and LeSourd, quoted by Shennan and Miller: Edinburgh M. J. **10**: 81, 1913.

[7] Bordet and Gengou: Compt. rend. Acad. d. sc. **137**: 351, 1903.

[8] Wassermann and Bruck: Deutsch. med. Wchnschr. **32**: 449, 1906.

[9] Caulfield: J. M. Res. **24**: 122, 1911.

[10] Laird: J. M. Res. **27**: 163, 1912.

[11] Hammer: München. med. Wchnschr. **59**: 1750, 1912.

[12] Calmette and Massol: Compt. rend. Soc. de biol. **75**: 120, 1912.

[13] Burns, N. B.; Slack, F. H.; Castleman, Philip, and Bailey, Karl: Application of the Complement Fixation Test to Tuberculosis, J. A. M. A. **68**: 1386 (May 12) 1917.

[14] Corper: J. Infect. Dis. **19**: 315, 1916.

[15] Corper, H. J., and Sweany, H. C.: Complement Fixation Tests in Tuberculosis, J. A. M. A. **68**: 1598 (June 2) 1917.

[16] Wilson, M. A.: J. Immunol. **3**: 345-350, 1918.

pigs as complement or the testing of the complement value and fixability of a single animal.

Moon[3] reports a series of cases in which he used a bacillary emulsion antigen prepared from dried bacilli. He states, however, that since compiling this report he has used a fresh, virulent bacillary antigen with much greater success. With the dried antigen, in 156 tuberculous cases, 85.2 per cent. were positive. Of these, twenty-one cases of incipient tuberculosis were positive in 87.5 per cent.; forty-nine cases of moderately advanced tuberculosis were positive in 85.7 per cent., and eighty-three cases of far advanced tuberculosis were positive in 84.3 per cent. Forty per cent. of sixty-one cases of suspected tuberculosis were positive. Twenty-six cases of other diseases showed 26 per cent. positive results. Of 100 positive Wassermann serums, thirty-eight gave a positive reaction. There were twelve positive tests among 100 young, healthy adults. Two of these were found to be tuberculous. He believes the test to be one of known clinical value, and as valuable in tuberculosis as the Wassermann reaction in the diagnosis of syphilis.

Petroff[17] describes a new glycerin extract tubercle bacillus antigen, for which he claims simplicity of preparation and reliability.

Brown and Petroff[18] found positive reactions in 51 per cent. of the incipient cases of tuberculosis, 73 per cent. positive in the moderately advanced cases, and 81 per cent. of the far advanced cases. They believe that as a case advances it becomes more active clinically and serologically. In 139 cases with positive sputum, 90 per cent. showed a positive complement fixation test, and when activity was also present, the positive results were 98 per cent. Cases with blood spitting were much more likely to be positive than those without. They do not believe that the presence of a positive Wassermann reaction has any bearing on the complement fixation for tuberculosis. They state that a positive reaction indicates that an antibody is, or has been, circulating in the blood stream. The intradermic test was found to be more sensitive than the complement fixation. They place the reaction among the tests of known clinical value.

Lange,[19] using four different antigens, namely, the bacillary emulsion of Miller, a sodium hydroxid extract, a methyl alcohol extract and the potato broth culture filtrate of Petroff, examined 864 serums. Fixation of some degree was found in 51.5 per cent. of the tuberculous cases, while nontuberculous cases were positive in 13.6 per cent. The alcoholic antigen gave the highest proportion of strong fixations in the clinically tuberculous cases, and the sodium hydroxid antigen, the lowest. With nontuberculous cases, the greatest proportion of strong fixations was obtained with the sodium hydroxid antigen, the smallest with the potato broth filtrate antigen. Of 147 positive Wassermann serums, twenty-six, or 18.7 per cent., were positive. Four of these were clinically tuberculous.

Stivelman[5] reports a series of 205 cases, twenty-two of which were nontuberculous, using Miller's antigen. The Wassermann reaction done as a routine showed four positive reactions, though none of the latter could be diagnosed as syphilitic. He found that about 50 per cent. of the tuberculous cases, active and inactive, gave a positive fixation. Seventy-four per cent. of twenty-five inactive cases with positive sputum gave a complement fixation, whereas only 28 per cent. of twenty-five active cases with negative sputum gave a positive reaction. Inactive cases with negative sputum gave 41 per cent. positive tests, while in active cases with negative sputum a positive reaction was obtained only in 28 per cent. He was particularly impressed with the exceedingly low proportion of incipient cases giving a positive fixation, the active being 15.8 per cent. and the inactive 39.5 per cent. He was unable to corroborate the favorable report of Miller.

A complement fixation test was made in over 100 cases that were referred to the tuberculosis section of the medical service of the Walter Reed General Hospital, for known or suspected tuberculosis. A few patients were seen only once. The others were examined several times, and most of them were in the wards for varying periods of observation. All patients about whom these was any question as to diagnosis were examined by two or more qualified medical officers and, with very few exceptions, stereoroentgenograms were taken after the examination was made. A stereoscope in the ward made possible an intimate study of the patient and his roentgenogram.

Depending on the symptoms, physical signs and roentgenoscopic findings, the cases were classified into six groups:

1. Signs of small healed lesion present (usually apical). Tubercle bacilli not demonstrated, (*a*) symptoms absent or due to some other cause, and (*b*) symptoms suggestive but inconclusive.
2. Small lesion; signs suggesting activity. Symptoms definite (tubercle bacilli may or may not be present).
3. (*a*) Large lesion; parts of one or more lobes involved; symptoms few or absent, and (*b*) same lesion as in 3 *a*, but symptoms of activity. Prognosis for arrest, good.
4. Extensive lesions and complications. Prognosis poor.
5. Possibly tuberculous; (*a*) inconclusive signs, suspicious symptoms, and (*b*) signs of small healed lesions; symptoms suggestive but inconclusive (Group 1 *a*).
6. Nontuberculous cases.

The percentages given should be accepted with some reservation because of the small number of cases in certain groups.

Group 1 *a* (seventeen cases) comprises those that showed evidence of an old and apparently healed tuberculous lesion and was made up of three classes of cases: (1) those who had one or more symptoms suggestive of tuberculosis but in whom a careful study demonstrated some other cause; (2) those presenting the residue of some acute pulmonary infection which bore no relation to the old tuberculous process, and (3) a small group with no symptoms but whose physical signs had excited suspicion. In this group, the diagnosis of which was given as "no sign of active tuberculosis," the complement fixation test was positive in 6 per cent.

The necessity for the second subdivision of this group, which may be designated as having "signs pointing to an old lesion with ill defined symptoms possibly due to tuberculosis," will be questioned by those who experience little difficulty in classifying their cases. We have not infrequently been in serious

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17. Petroff, S. A.: Am. Rev. Tuberc. 2: 525-540, 1918.
18. Brown, L., and Petroff, S. A.: Am. Rev. Tuberc. 2: 525-540, 1918.
19. Lange, L. B.: Am. Rev. Tuberc. 2: 541-545, 1918.

doubt as to whether or not certain symptoms were due to a lesion when activity could not be established either by physical signs or by roentgenoscopic studies. This group of eleven gave 18 per cent. positive reactions.

The number of really incipient cases (Group 2) is unfortunately small, as it is in this group, in which tubercle bacilli are so often not to be found, that we most need the assistance of the complement fixation test. Our cases were so few—only eight in all—that no deductions of value can be drawn. Thirty-seven per cent. gave a positive reaction. Some of the more advanced cases studied seem to show that the incipient stage may sometimes merge into a moderately advanced stage with no symptoms to herald its progress. We are inclined to believe that some of the cases that were ultimately diagnosed as not clinically tuberculous would have been called incipient had opportunity not been afforded for careful study including stereoroentgenoscopic examination. Moreover, in a few instances, the roentgen ray revealed that our apparently incipient case was in reality moderately advanced. Two of four moderately advanced cases, with few or no symptoms, reacted positively.

TABLE 1.—RESULTS IN ACTIVE, INACTIVE AND POSSIBLY ACTIVE CASES

	No. of Cases	Per Cent. Positive
Total active cases of tuberculosis	36	58
A. Tubercle bacilli in sputum	27	67
B. Without tubercle bacilli in sputum	9	33
Possibly active tuberculosis	19	16
Evidence of old inactive lesion	17	6

The number of moderately advanced cases with symptoms of activity, yet presenting a good prognosis, was seventeen, and 65 per cent. gave a positive test. In fifteen, there were tubercle bacilli in the sputum, and of these 62 per cent. gave a positive reaction. Eleven cases classified as actively progressing, with a poor prognosis, gave 64 per cent. positive. In all but one of this group the sputum was positive. In this case bacilli were abundant in the bronchial secretions at necropsy. Of the group "possibly tuberculous," those having signs of an old healed lesion have already been considered (Group 1 *b*). There were eight other patients in whom the evidence of an old lesion was lacking, but who had a suspicious yet inconclusive history. Among these were several cases of serous pleuritis, some of which were probably tuberculous. This group as a whole gave 15 per cent. positive reaction. In fifty-one patients the physical signs did not indicate an old tuberculous lesion, and their symptoms were due to other causes. The reaction was positive in 10 per cent. For practical purposes we may add to this group those who had an old healed process but no activity, making a total of sixty-eight patients suffering from various conditions, clinically free from tuberculosis, with 8 per cent. giving a positive fixation test.

The serums from forty individuals, especially selected because of their very robust condition, were examined and, with the exception of one case, all were negative. This case showed a "single plus" reaction (50 per cent. inhibition). However, when the test was repeated several times on fresh serum, it was found constantly negative.

The complement fixation for tuberculosis was done on 228 different serums, showing a positive Wassermann reaction. The Wassermann reactions were made with a human hemolytic system and a cholesterinized human heart antigen. In this series, 486 examinations were made, as a number were repeated several times. Eleven of these serums showed a positive fixation for tuberculosis. Three of these patients were found to be tuberculous, the other cases apparently being nontuberculous. The latter may belong to the group of cases, described by Brown,[18] in which the test remains positive after a cessation of activity.

TECHNIC

Serum.—The patient's serum is removed from the clot as soon as possible. It is inactivated for thirty minutes at 56 C. One-tenth c.c. undiluted serum is used for the test and 0.15 c.c. as a control for anticomplementary action. When used again, the serum is again inactivated for ten minutes at 56 C.

Antigen.—The lipoid-free tubercle bacillus antigen described by Wilson[16] was used. The amount of antigen used for each test contained approximately 10,000 dried tubercle bacilli. It was never anticomplementary in four times the amount used in the test. Before each test, the amount of antigen used was diluted and inactivated at 56 C. for thirty minutes.

Complement.—The pooled serum from at least six guinea-pigs was always used in a 1 : 10 dilution. After titration with sensitized cells, two units are used in the test.

Hemolytic System.—One-tenth c.c. of 5 per cent. washed sheep corpuscles is used, sensitized with an equal amount of diluted amboceptor containing two standard units. Sensitization is done in the water for thirty minutes at 37.5 C.

Controls.—Controls are run on the antigen for anticomplementary action and specificity, on the serum for anticomplementary action and specificity, on the complement for stability (system control), and on the sensitized cells for reading control.

The complement titration and the test are incubated in the water-bath at 37.5 C. for fifteen minutes, and the fixation for one hour.

TABLE 2.—RESULTS IN THE NONTUBERCULOUS

	No. of Cases	Per Cent. Positive
Symptoms or signs of pulmonary disease, but diagnosed as not tuberculous	51	10*
Especially robust individuals	40	0
Nontuberculous syphilitics	225	3.5

* Two cases which at first gave a positive result, but later a negative, not included.

While stationed at this post, Lieut. H. von Wedel inaugurated successfully the complement fixation test for tuberculosis in the routine of the laboratory. A few of the cases reported in this series were examined by him. However, we are not convinced that his observation regarding the difference in reaction of a fresh serum and one kept from five to seven days is diagnostically correct. He believes that many serums from tuberculous cases which are negative on the day following the taking of the blood become positive when kept in the refrigerator for from five to seven days under sterile conditions. Rapoport[20] made a similar observation in his study of the fixation test in influenzal pneumonias, using strains of *B. influenzae* as antigen. Of all serums in this series that were examined, the examinations were made on the day following bleeding and again one week later. However, we have recorded only the first result in our statistics in this paper, reserving the results of the second examination until such time as we are convinced of the real value of von Wedel's observation.

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[20] Rapoport, F. H.: The Complement Fixation Test in Influenzal Pneumonia, J. A. M. A. **72**: 633 (March 1) 1919.

A Wassermann test with a cholesterinized antigen has been made in all of the cases. We cannot agree with those who assert that tuberculosis will give a positive reaction in the absence of syphilis if a cholesterinized antigen is used. Too often the failure to obtain a history of infection or evidence of syphilitic disease is considered sufficient evidence to exclude syphilis. Seven per cent. of our forty-one definite cases of tuberculosis gave a positive Wassermann reaction, and all gave a history of a venereal sore.

SUMMARY

1. Forty robust men of the surgical service all gave a negative fixation test.
2. Sixty-eight individuals, when first seen, presented some symptoms, or physical signs, suggesting tuberculosis, yet were ultimately diagnosed as not clinically tuberculous. The tuberculous fixation test was negative in 92 per cent. of this group.
3. Of nineteen patients about whom a reasonable doubt existed and who were classified as "possibly tuberculous," 15 per cent. gave a positive reaction.
4. Of eight incipient cases, 37 per cent. gave positive reactions.
5. Four with moderately advanced lesion, yet few or no symptoms, gave 50 per cent positive.
6. Of seventeen patients with moderately advanced disease and definite symptoms of activity, but in whom the prognosis seemed good, 65 per cent. were positive.
7. Of eleven with advanced disease and a poor prognosis, 64 per cent. were positive.
8. Of twenty-seven active cases with tubercle bacilli in the sputum, 67 per cent. were positive.
9. Of nine active cases without tubercle bacilli in the sputum, 33 per cent were positive.

CONCLUSIONS

1. It is at once apparent that the practical utility of the complement fixation test in the diagnosis of tuberculosis is limited by the fact that the highest percentage of results obtains in the cases in which its need is least felt, namely, the obvious cases with tubercle bacilli in the sputum.
2. Nevertheless, from our experience, it would seem that with suspicious symptoms and suggestive, yet inclusive signs, a negative fixation test, using the method herein described, increases to a considerable degree the probability of the nontuberculous nature of a given case.
3. With the same symptoms and signs, a persistently positive reaction probably signifies an active tuberculosis.
4. A positive reaction occurring with neither symptoms nor signs does not justify a diagnosis of active tuberculosis, though it is quite probable that there has been an active process recently. In such a case, roentgenoscopy should be employed and the patient observed for several months.
5. With frank signs and symptoms, yet with no tubercle bacilli in the sputum, a negative test cannot outweigh the clinical evidence, though in all such cases a Wassermann test should be made.
6. The diagnosis of tuberculosis is many times one of great difficulty. A careful history, a thorough examination, repeated sputum examinations and roentgenoscopic studies are all of recognized importance and cannot be replaced by any complement test yet devised.

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IMMUNIZATION AGAINST MEASLES *

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Measles is perhaps the most widespread and common of all infectious diseases. Practically all human beings are susceptible to it. If one escapes a childhood infection, adult life is no protection. No age, sex, race or climate is exempt. Contrary to popular conception, it is a disease serious to life. In the year 1913 it was the cause of 8,108 deaths in the registration area of the United States, embracing 65 per cent. of the total population. In the same year, there were 5,498 deaths from scarlet fever. While the mortality is highest in children under 5 years of age, and particularly under 3, the recent experience in the army camps of this country shows that it may produce a high mortality among adults under certain conditions.

Methods of controlling this disease in private life or in institutions have been of little avail, so that any new method that bids fair to produce results should receive a trial.

Very little has been attempted toward the immunization against measles. In 1915, Dr. Charles Herman of New York reported some work done by him.

His experiments were suggested by the fact that children under 6 months seldom contract the disease, or if they do contract it they have it in light form. Forty infants were inoculated. The virus was collected on cotton swabs from the nose of patients twenty-four hours before the appearance of the rash. These swabs were rubbed gently over the nasal mucosa of the forty infants. The majority of the infants showed no distinct reaction, fifteen had a slight rise in temperature, and in a few instances a small number of spots were noted on the face and body. Since then, four of the forty (being over 1 year of age) have been in intimate contact with cases of measles and none have contracted the disease. Two others of the forty were reinoculated at the age of 21 and 23 months, respectively, with a negative result.

The attempt at immunization against this disease was suggested by Dr. Charles V. Chapin. The basis of his suggestion was the use of virus and immune serum for immunization against hog cholera. This method has had much success.

The only other attempt to immunize with convalescent serum was reported by Nicolle and Conseil,[1] who used serum from a child, the first case in a family of four children. Two of the other children were not treated, but a child 2 years of age was given serum from the first case, taken on the seventh day of convalescence and ten days after the first symptoms. The

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* From the Providence City Hospital.

* Read before the Rhode Island Medical Society, March 7, 1919.

[1] Nicolle and Conseil: Bull. de la Soc. méd. d. hôp. de Paris, April 12, 1918.

other two children came down with measles in three or four days, but the 2-year-old escaped, although exposed to the first child and later to his two brothers.

Two methods were followed by us: first, the use of convalescent measles serum alone, and second, the simultaneous inoculation of the patient with both virus and immune serum. From what we know of passive immunity, it is hardly to be expected that a permanent immunity could be induced by the first method. More could be expected of the use of both virus and immune serum. The first method was easiest to apply, as inoculation experiments with virus in institutions require considerable courage and judgment. Three such experiments were done, however.

The first group to be reported on was passively immunized with convalescent serum. The term "passive immunity" is used, although so far as is at present known this immunity might be quite permanent.

The second group, consisting of three patients, was inoculated with both virus and convalescent serum, and it might be conceded that an active immunity resulted.

The opportunity to do this work came in the spring of 1918, when there was much measles in the city. It was so prevalent that in spite of precautions to learn whether children admitted for other diseases had been exposed to measles at home, errors would occur. It so happened that there were instances in which children were admitted with other diseases during the incubation period; and when it developed, they were being treated in the same unit with other patients. It has been our experience that it is impossible to recognize the disease early enough to withdraw such children from among those whom they might infect, to save cross infection.

A careful history of whether the children selected for inoculation had ever had measles was obtained from the parents. Such a negative history is more to be relied on in the case of measles than almost any other infectious disease.

PASSIVE IMMUNIZATION AGAINST MEASLES

Blood Serum Preparation.—Blood was withdrawn from veins on the flexor surface of the elbow. It was collected in sterile test tubes marked with the name of the patient. These test tubes were placed in the refrigerator over night. Next morning, the serum was decanted into one or more sterile test tubes. The serum of each patient was kept separate. A Wassermann test was made of each patient's serum. Serums of different patients, reacting negatively, were then mixed for treatment. Record was kept of the time after the date of the rash when patients were bled. The serum was kept in the ice-box for a week at most, without addition of a preservative. If it was kept longer, a 0.25 per cent. solution of tricresol was added.

The serum was given intramuscularly, into the thigh, usually a single dose within a few days of exposure. No reactions, either local or general, were noted. Dosage was from 7 to 25 c.c., usually a single dose.

Group 1.—*Use of Serum on Nonimmunes Exposed to Measles.*—The first group of patients, four in number, were in a convalescent diphtheria ward with sixteen beds. These patients mingle freely. They were the only children who had not had measles, and the parents of each were interviewed carefully to obtain the history. They were exposed to two patients who came to the hospital during the incubation period. The first, Norma I., aged 6 years, had been in this ward five days when the rash began on May 5. Helen F., aged 8 years, had been in this ward three days when the rash appeared on May 9. They were both moved out of the ward at the appearance of the rash, yet they were there during the most highly infectious period.

Shirarina C., aged 16 months, and Alfred D., aged 2 years, were each given 15 c.c. of convalescent serum on May 11. The serum used was from five patients taken nine, nineteen, eight, twenty-five and seven days, respectively, after the rash of measles. Neither of these patients developed measles, and they were observed throughout the period of incubation, as were all of the exposed patients.

Lillian W., aged 13 months, was given on May 1, 6 c.c. of convalescent serum, taken from three patients, which had been collected ten, nine and twenty days, respectively, after the rash. This patient showed no signs of measles.

The fourth child, Gaetano F., aged 18 months, of this exposed group of nonimmunes, was used as a control and was given no convalescent serum. May 24, she developed a typical measles eruption.

Group 2.—May 13, a patient with laryngeal diphtheria was admitted to the laryngeal room with three or four other patients. All patients were treated in the same unit, no precautions being taken by physician or nurse. Being very ill, they were given much nursing by a special nurse, night and day. May 15, it was learned from the mother of the patient with laryngeal diphtheria that there were six cases of measles in her house. The child was at once examined, and many Koplik spots being found, the child was removed to another ward.

In this room were two children who had never had measles. Raymond B., aged 1 year, was given, May 18, 15 c.c. of serum obtained from five patients taken nine, four, four, fourteen and six days, respectively, after the measles eruption. The patient did not develop measles.

Alfred A., aged 4 years, was given 15 c.c. of convalescent serum, May 16, obtained from two patients eight and ten days, respectively, after the rash. This patient did not develop measles.

Group 3.—June 2, Veronica L., aged 3 years, developed a measles rash in the laryngeal room. She was removed at this time.

In this room, in the same unit, was Willard D., aged 7 months, who had never had measles. He was three days with the preceding patient. He was given 15 c.c. of convalescent serum, June 2, taken from a mixed serum from eight patients five, six, eleven, nine, eight, seven, ten and nine days, respectively, after the rash. He did not develop measles.

Patients Exposed to Infection Through Nurse.—June 13, Mary McD., a nurse, developed a rash while working in the scarlet fever ward. She had been working in the same ward for one week. There were three patients in this ward who had never had measles:

John W., aged 2 years, and Jeanette J., aged 3 years, were given 10 c.c. of serum, June 16, and Baby Moran 5 c.c. of a mixed serum from five patients taken thirty-one, nine, forty, six and five days, respectively, after the measles eruption. These three were observed throughout the incubation period, but did not develop measles. It must be taken into consideration, however, that the nurse during her duties washed her hands frequently, and may not have infected them.

Cases Occurring in Ward D.—A large room for from ten to twelve patients in this ward is so arranged that aseptic precautions can be taken, if necessary, each patient being isolated. The beds are about 10 feet apart, on centers, with no kind of partition between. We have not been entirely successful in preventing the spread of measles in such a room. It does control measles to a large extent, however. This explanation is made to make clear what is meant by partial exposure.

Shirarina C., aged 16 months (referred to above in Group 1), had been given convalescent serum, May 11. May 25, while in another unit, she was partially exposed to a child with a measles rash for about ten hours. Again, June 16, she was partially exposed in the same ward to a second child, who developed a rash, June 16. Shirarina C. did not develop measles, although she had received only the one dose of convalescent serum, May 11.

Howard D., aged 18 months, was partially exposed to a child who developed a measles rash in the same room, May 24, but not in the same unit. This exposure was over a period of several hours. Howard D. was given 10 c.c. of convalescent serum, May 27, taken from five patients nine, four, four, fourteen and six days, respectively, after the rash. Howard D. did not develop measles. Again, June 16, Howard D. was partially exposed to a second patient in the same room, but a different unit. Howard D. was not given any more serum and did not develop measles.

In the same room, in Ward D, June 16, Ralph L., aged 7 years, developed a measles rash. In this room, but in a separate unit, were three children who had not had measles.

Regina C., aged 1 year, and Camella B., aged 2 years, were also patients. The first was given 7 c.c. and the second 10 c.c. of mixed serum, June 16, taken from four patients seven, seven, nine and forty days, respectively, after the onset of the rash. Dorothy G., aged 7 years, on the same day was given 10 c.c. of serum, taken from five patients thirty-one, nine, forty, five and five days, respectively, after the onset of the rash. These three children did not develop measles.

ACTIVE IMMUNIZATION

Three patients were treated as follows:

Experiment 1.—Esther V., aged 4 years, was partially exposed to a child who, May 24, developed a measles rash in the same room, but in a separate unit for several hours. May 27, she was given 15 c.c. of convalescent serum, taken from three patients five, eight and ten days, respectively, after the rash. On the same day (May 27), direct swabs from the nose and throat of two children, who developed the rash on the same day (May 27), were taken. They were put back into the test tube, and were taken directly to the ward where Esther V. was then a patient. The nose and throat of Esther V. were thoroughly swabbed with this fresh secretion. The time between taking the secretions and the swabbing of the second patient was not over three or four minutes. Esther V. had pertussis and usually had a temperature of about 100. Twelve days later, a discrete hemorrhagic eruption appeared on her face, with a few scattered patches on her body. They were raised to the touch. They were most numerous on her face. On the same evening, the temperature rose to 103. Next day, subsequently, it remained as usual. The rash did not extend, and faded away in a few days. There were no Koplik spots or catarrhal symptoms, and the child sat up in bed as usual, not seeming to be at all ill.

This experiment seems to show that, if she was really infected, either naturally or artificially, and we have reason to believe she was, this patient did, twelve days after inoculation, show a reaction which may have been an abortive measles. If it was an abortive measles, even though the serum did not entirely prevent it, it showed inhibitive power. The reaction might have been due to the serum, but it was not like any I have ever seen.

The attack would never have been thought of as measles unless we had known of the inoculation.

Experiment 2.—August 11, Regina C., aged 1 year, and Morris S., aged 4 years, neither of whom had ever had measles, were infected with nasal and throat swabbings taken from a child whose rash began on the day before. Swabs were used on the donor, one of the nose and nasopharynx, and one of the throat. There was only an interval of two or three minutes before the inoculation was done. Both swabs were used in swabbing the nose and throat of the two children, Regina C. and Morris S.

August 12, each child was given 25 c.c. of a mixed convalescent serum, and this was repeated, August 14. The mixed serum was about 2 months old and was taken from eight patients five, six, eleven, nine, eight, seven, ten and nine days, respectively, after the rash. There was no reaction from the serum, and neither child showed any signs of measles in the hospital.

CONCLUSIONS

Six children were definitely exposed to measles and were apparently protected from the disease by immune serum; one, used as a control, developed measles. Eight others were partially exposed and did not develop the disease after immunization. Three other patients received virus inoculation and immune serum simultaneously. In two there was no reaction. In the third there was a slight reaction indicated by a transient rise in temperature and an atypical rash.

The experiments are too few to be conclusive, but they are sufficiently suggestive to warrant further investigation.

THE RELATION OF THE LYMPHOCYTE TO CANCER

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While the morphology of the various formed elements of the blood is now on a fairly scientific basis, there remains considerable lack of knowledge in regard to the origin and function of these cells. It is a matter of common agreement that the red cells are formed in the bone-marrow in adults and in the liver and spleen in embryos, while the origin of platelets is still in doubt. The polymorphonuclear leukocytes come originally from bone-marrow; the lymphocytes are derived from lymph glands and from tissue, and the large mononuclears have either the same origin as lymphocytes, or develop from endothelial cells lining blood or lymph vessels.

Not all the functions of these cells have been elucidated, although the evidence indicates that the red cells are concerned chiefly in tissue respiration, or the carriage of oxygen to the tissues; while the blood platelets are apparently involved in the phenomena of blood clotting. The white cells as a class are regarded as protectors of the body tissues against injurious agents of all kinds, and are intimately associated with the processes of inflammation. Polymorphonuclear leukocytes and large mononuclears are more involved in the defense of the body through an actual attack against the injurious agents, resulting in the engulfing (phagocytosis), neutralization and absorption of such agents. My opinion is that the small mononuclears, or lymphocytes, which are made up chiefly of nuclear material, have as their chief physiologic function the carriage in the form of nuclear enzymes of energy that is required by normal living body cells in the processes of growth and multiplication. Under abnormal conditions, and in concentrated numbers, these lymphocytes may give additional aid and energy to the normal body cells surrounding areas of injury and inflammation, thus causing a local speeding up of proliferation and repair.

In the growing embryo, the red cells apparently are the first to appear in the blood, which might be expected if cell and tissue respiration or oxidation is the prime factor in life. Of the white cells, the first to appear in the blood of the young embryo (usually about the tenth week of life) is a cell corresponding to the lymphocyte. Here again it is only logical that the cell which possibly has to do so much with growth energy should appear before the polymorphonuclear cell which has to do with the protection of that growth and life against injury.

During the entire fetal life, which involves characteristically rapid growth and multiplication of body cells and tissues, the lymphocytes remain the most numerous of the white cells; indeed, a relative increase or lymphocytosis persists during early childhood, the period of continuously rapid growth. At the time when body growth has reached its maximum, a definite change is found in the relative number of white cells in the blood, the number of lymphocytes being very much less than that of the polymorphonuclears, while at the same time the special auxiliary lymphoid tissues (such as the thymus) which have to do with growth rapidly atrophy.

It appears, therefore, that the lymphocyte possibly may be described as the male cell of the blood, and that through a process which is as yet not thoroughly understood, it has the power by means of the enzymes of its mass of nuclear material to energize the body cells with which it comes in contact, causing them to grow and divide. It is probable that the lymphocyte, or its energy substance, is under the constant control of an antibody, and that under normal conditions the influence of the lymphocyte and its enzymes is regulated for the exact demands of the body cells and tissues in their regular growth and division, or to meet the special requirements of increased local repair at points of injury.

It is my belief that as the controlled lymphocyte may be the potential father of normal body cells, so the uncontrolled lymphocyte may be the potential father of the tumor cell. The potential mothers of tumor cells are the epithelial cell, the connective tissue cell, the muscle cell or other tissue cells. The offspring of such unions may be the tumor cells themselves—the cancer cell, the sarcoma cell, the myoma cell.

The primary basis of cancer probably is a cell or tissue injury due to various physical, chemical, parasitical, mechanical or metabolic agents. The actions of such agents may be just as certain, even though they are not seen and appreciated. Because there is no history of cell or tissue injury is no reason to doubt this important precancerous factor.

Local injury is followed by local inflammation, and the latter involves the concentration of defensive polymorphonuclears and large mononuclears which attack the agents of injury, and also involves the concentration of the offensive lymphocytes with their energy-bearing enzymes, which may stimulate the surrounding tissue cells to more rapid proliferation and repair. It is significant that the lymphocytes are usually more concentrated at the periphery of a lesion. They are apparently more in contact with and more concerned in the repair work of surrounding tissue cells than in the attack on injurious agents; that is, they are seldom, if ever, phagocytic. These fundamental principles of my theory in regard to malignancy have been outlined in previous articles on the subject.[1]

In the warfare between injurious agents (especially bacteria) and body cells, the polymorphonuclear leukocytes making up the standing army rush to the defense of the body at the point of attack, and by an offensive campaign either destroy the invaders or are themselves destroyed. The endothelial leukocytes constitute the ambulance corps and bear away dead or injured bacteria, polymorphonuclears or other blood cells. The lymphocytes, on the other hand, make up the army of reconstruction. If the repair is of a normal nature, well controlled by antibodies, the result is normal healing. If the repair is of an abnormal nature due to the lack of controlling forces or antibodies, the result is lawless repair or cancer.

Thus cancer may be due to two factors, one local, the other general—a local cell stimulus which is set up by the energy-bearing lymphocytes concentrated by any form of local injury (usually chronic); and a general loss of lymphocytic control due to an acquired or possibly hereditary lack of antibodies in the tissues or circulation. Hence, cancer may be the result of an autoparasitism, in which local accumulations of uncontrolled lymphocytes are the important factors. The prevention and cure of cancer possibly may be brought about by the active or passive increase of the controlling lymphocytic antibodies.

That there is evidence from the work of various investigators to strengthen this hypothesis is indicated by a study of the literature on the subject.

Virchow[2] was probably the first to suggest an analogy between the fertilization of the ovum and the development of the cancer cell. Klebs[3] called attention to the common association of leukocytes and cancer cells, and believed that the former might fertilize epithelial cells and cause the latter to develop into cancer. In a study of resistance against transplanted mouse cancer, Bashford[4] found that the injection of normal mouse blood corpuscles induced a definite resistance against transplanted cancer. It is possible that corpuscular antienzymes were thus stimulated, with the result that the cancer cells could not find proper energy soil for their development.

Lewin,[5] in like manner, produced resistance against both rat carcinoma and rat sarcoma by the injection of normal rat blood; while Weidanz[6] obtained somewhat similar results with normal blood inoculations. Apolant[7] reported induced resistance by the injection of normal blood even from alien species. DaFano[8] associated the lymphocyte with the distribution, or stimulation, of immunity against transplanted cancer. Bashford, Murray and Cramer[9] showed that active resistance in mice against transplanted cancer might be developed as soon as four days after the inoculation of normal mouse blood, but that the resistance was greater after ten days—evidence of the stimulation of antibodies. Bashford, Murray and Haaland[10] demonstrated that as high a degree of immunity could be established by inoculation of normal blood as by injection of blood from tumor-resistant mice.

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[1] Bristol, L. D.: Med. Rec. **83**: 787 (May 3) 1913; J. M. Res. **32**: 475 (July) 1915; Med. Rec. **89**: 180 (Jan. 29) 1916; Science **54**: 58 (July 14) 1916; J. Maine Med. Assn. **9**: 57 (Oct.) 1918.

[2] Virchow: Die krankhaften Geschwülste, Berlin, **1**: 87, 1863.

[3] Klebs: Die allgemeine Pathologie, Jena, **2**: 524, 1889.

[4] Bashford: Brit. M. J. **2**: 209, 1906.

[5] Lewin: Berl. klin. Wchnschr. **44**: 1606, 1907.

[6] Weidanz: Arb. a. d. k. Gsndhtsamte. **30**: 443, 1909.

[7] Apolant: Ztschr. f. allg. Physiol. **9**: 91, 1909.

[8] DaFano: Ztschr. f. Immunol. Orig. **5**: 68, 1910.

[9] Bashford, Murray and Cramer: Proc. Roy. Soc., Series B **79**: 180, 1907.

[10] Bashford, Murray and Haaland: Third Sc. Rep., Imp. Cancer Res. Fund, London, pp. 395, 369, 1908.

Collection and concentration of lymphocytes are very commonly found around growing spontaneous tumors and around living tumor grafts. DaFano[11] believes that in the latter the lymphocytes are concerned with the development of resistance against such grafts. Murphy and his co-workers[12] have shown that mice in which lymph glands and lymphoid organs have been unfavorably affected by roentgen-ray treatment are especially susceptible to the growth of transplanted tumors, and they believe that the lymphocyte is a potent factor in establishing the immunity of mice to transplanted cancer. More recently Murphy and Sturm[13] have demonstrated that after stimulation of lymphoid elements by heat, tumor grafts are much less successful. Corson-White,[14] in a study of the blood of tumor rats, following cancer-stimulating and cancer-inhibiting diets, found no change in the counts of red cells and no change in the numerical counts of white cells, except in the case of lymphocytes, and here definite changes in their numbers were noted.

One of the most striking and characteristic, as well as fatal, features of cancer is the spread of metastases, usually through lymph spaces and glands, less frequently through the blood stream. Instead of encountering resistance in lymph glands, cancer cells apparently find in lymph cells and tissues a lack of resistance or a definite nutritive soil and extra supply of energy for their continued growth and uncontrolled multiplication.

May we not say of metastatic cancer cells in lymph glands what Herbert Spencer[15] said of plants and animals in general? "The multiplication of any kind of plant or animal in localities that are favorable to it, is a growth where the antagonistic forces are less than elsewhere." What an important step it would be in the solution of the cancer problem if it were possible to control the spread of metastases by causing lymph glands to be actually antagonistic to cancer cells!

It is a significant fact that roentgen rays have an apparently specific effect on cancer cells, spermatozoa, ova and lymphocytes. Their effect on blood corpuscles other than lymphocytes is not marked. Does this not indicate a similarity in the basic substances or energy of such cells?

Based on this theory of the relation of localized uncontrolled lymphocytes and their nuclear enzymes to the energizing of epithelial cells leading to lawless reproduction, or cancer, experiments are being carried on in our laboratory to determine a possible means of controlling lymphocytes and cancer. These experiments will be described in a subsequent communication.

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11. DaFano: Ztschr. f. Immunol. Orig. 5:1, 1910.
12. Murphy, J. B., and Taylor, H. D.: J. Exper. M. 28:1 (July 1) 1918.
13. Murphy, J. B., and Sturm, Ernest: J. Exper. M. 29:25 (Jan. 1) 1919.
14. Corson-White: Proc. Med. Soc. of Penn., 1918.
15. Spencer: First Principles, New York, D. Appleton & Co., 1896, p. 234.

Racial Factors in Tuberculosis.—The findings in the Framingham demonstration as to racial factors bear out previous experience elsewhere, namely, that the Italian race stock presents a low tuberculosis incidence, in contrast to high rates in French-Canadians, Irish and other race stocks. On the other hand, the von Pirquet skin reaction among children shows a high percentage of infection among Italian children, with a correspondingly low incidence of active disease.—*Bulletin*, National Tuberculosis Association.

THE NEEDS OF MEDICAL EDUCATION AS REVEALED BY THE WAR[*]

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It is regretted that accurate statistical data to support statements made herein are not yet available, but lack of time as yet has made impossible the analysis of the vast amount of data in the records of the Surgeon-General's Office pertaining to this subject. But the Surgeon-General's great interest in this matter will doubtless result in a critical study of the data and a presentation of the results at no distant date. I do not comment further with respect to the probable results of this future statistical study other than to venture the conviction that they will prove disconcerting to any who may have entertained the idea that general standards of medical education in this country have reached a satisfactory degree of excellence.

You are accordingly asked to consider the following remarks as merely suggestive, as preliminary to the exact information later to be available, and as only embodying general impressions that I gained of medical officers under instruction at medical officers' training camps while I was in general charge of Medical Department training from May, 1917, to May, 1918. During this period I made frequent visits to the several camps located at Fort Benjamin Harrison, Ind.; Fort Riley, Kan.; Fort Oglethorpe, Ga., and Allentown, Pa. The camp at Fort Des Moines, Iowa, was also an instruction center and was duly visited, but was for colored medical officers only.

While accurate figures are lacking, it is doubtless true that more than half the medical officers who entered the service passed through the above named camps. The impressions gained were largely derived, of course, from the commandants of these camps and other officers pertaining to their respective staffs of instructors. They were accordingly second hand to a very considerable extent, but had the advantage of representing the composite ideas of large numbers of instructors.

For the period from May to October, 1918, I was in command of Camp Greenleaf, Fort Oglethorpe, Ga., and consequently was in close contact with the medical officers sent for instruction there. Camp Greenleaf at that time was handling over four fifths of medical officers sent to camps for training, as the camps at Fort Benjamin Harrison and Fort Des Moines had been discontinued, and those at Fort Riley and Allentown greatly cut down. Camp Greenleaf had then some 2,500 officers under instruction at one time, of which over 2,000 were medical officers and the remainder were student officers of the Dental, Veterinary and Sanitary Corps. With the concentration of training, these officers came to Camp Greenleaf from every part of the United States, so that they represented a fair cross section of the medical profession of the country, as it was accepted for service in the Medical Corps of the army.

In this connection, I would say that the opinions of Col. W. N. Bispham, Medical Corps, who will doubtless discuss this paper, should be of equal or greater value than any here expressed, for as commandant of the medical camp at Fort Riley, and later as commandant of Camp Greenleaf, he was in close relation with the student medical officers throughout the war, and had exceptional opportunities for personal observation from the standpoint of an experienced educator.

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[*] Read before the Fifteenth Annual Conference of the Council on Medical Education of the American Medical Association, Chicago, March 3, 1919.

Most of the officers entering the army for the emergency volunteered for service from patriotic purposes. Probably few came in at the outset because of the draft. Later, with the raising of the age limit under the draft, a somewhat larger number probably were impelled to offer services which might later be requisitioned. Some actually appeared as drafted men; a few unwilling, others physically or otherwise rejected as officers, yet held to service by draft boards, and some who were graduates of low standard schools who had not been invited by the Surgeon-General to appear for examination for commissions. Practically all of these physicians who entered the service at medical training camps as privates were, it is believed, sooner or later examined as to their fitness to be officers. Some who had been previously rejected physically had their less serious defects waived and were given special duties which they could perform when the need for medical officers became more acute.

PERSONNEL OF ORIGINAL MEDICAL RESERVE CORPS

At the outset of the war, the list of civilian physicians already enrolled for such service as might be required amounted to some 1,600, and composed the Medical Reserve Corps of the United States Army. It was the first—and a most valuable—dependence of the Medical Department. Most of its members were promptly called to the colors, when they saved a most difficult situation in respect to meeting the early needs for the organization of the rapidly expanding medical service and the recruitment and care of the new troops.

This original Medical Reserve Corps was organized long before the European war, and at a time when the services of its members seemed little likely ever to be needed except to supplement to a small extent the regular Medical Corps on a peace time basis. It was merely a precaution and insurance of the Medical Service of the army and medical profession of the country against what was considered an improbable emergency. History shows how wise was this precaution, the inception of which was largely due to the forethought and energy of Gen. J. R. Kean of the Medical Corps.

But the nature of the conditions and ideas under which the old Medical Reserve Corps was organized had their influence on its medical standards and the medical examinations required for its enrolment.

In general, it might be said that it was composed of three classes:

(*a*) There were the recognized leaders of the medical profession, who lent the weight of their well known names and great professional reputations to popularize the then new Reserve Corps.

The abilities of these men were well known, and the examinations to which they were subjected were probably cursory.

(*b*) A somewhat smaller class probably consisted of a personnel drawn from the average class of practitioner, such as constitutes the backbone of the medical profession of the country.

Here also the examinations which they were required to pass were none too rigid; but by reason of the accepted candidates' being qualified in fact, no professional difficulty later occurred as a result of any professional inefficiency on their part.

(*c*) There was also a not inconsiderable third class, composed of less well qualified men, some of whom enrolled for patriotic purposes and others perhaps by reason of the desire to possess a commission signed by the President of the United States as a credential of professional ability additional to their diploma and license to practice.

These men likewise, in many instances, received an examination of less searching character. Possibly, too, some examiners were inclined to leniency as to standards, feeling that the offer of services of these men should be recognized by their acceptance unless grossly inefficient, and being comforted by the idea that there was little likelihood of their services being ever called on. Unquestionably, a number of the latter class of men should never have been recommended to the Surgeon-General for commission. As soon as they were called into service, questions as to their competency developed. If I recall correctly, the chief surgeon of the Western Department reported that he had, in his department, a large number of this class, representing largely a wandering type of physician who had temporary employment on ships, in the salmon fisheries, in mines, on plantations in Mexico and in South America, etc.

These substandard men were later reexamined, as their deficiencies became apparent, and doubtless all of them were ultimately eliminated from the service.

The number of these professional undesirables is not known to me, but my impression is that they probably composed some 15 per cent. or more of the old Medical Reserve Corps.

STANDARDS OF EXAMINATIONS

At the outset of the war, there is no question also but that some of the local examiners of applicants for appointment in the Reserve Corps did not maintain adequate standards for either physical or professional efficiency. Poor men were not rarely recommended for appointment. I assisted in the examination of a large number of papers of applicants, and helped to reject not a few who were obviously unfit. I have a vivid recollection, for example, of a candidate who was recommended by one examiner despite the fact that his papers showed that he was 68 years of age, was grossly obese, and further, had lost one leg below the knee.

The thought tended to occur, in such instances, as to whether the examiner was as much interested in securing competent medical service for the army as in helping diminish local professional competition.

Fortunately the number of such unduly lenient examiners was not great, and as soon as they were discovered they were promptly relieved from examination work. The men that they passed, however, added to the problem of elimination that had to be solved later.

It should be said here that most of the examiners were thoroughly conscientious, and the men whom they recommended were found to be qualified. Some examiners perhaps were even overstrict, as there were cases of men who were rejected and who were later drafted, and on being reexamined were found qualified.

As the war went on, the local examiners became better versed with the army requirements, and fewer mistakes were made. On the whole, the system of local examiners might be considered as efficient if duly checked up later. The number of undesirables, such as the professionally incompetent, physically incapacitated, men of bad character, alcoholics, drug addicts and others who were kept out of the service in this way, was very great. The experience of the Spanish War, when men were accepted for the Medical Service with little, if any, examination as to their fitness, was not repeated to any great extent. All this saved a vast amount of medical inefficiency and justifiable cause for criticism of the professional care of the disabled and greatly reduced the labors of later examining boards necessary to relieve the service of inefficients.

SELECTION OF MEN WHO REACHED THE MEDICAL TRAINING CAMPS

It must be emphasized that the medical officers who finally reached the medical training camps represented much better than the average of the medical profession of the country, for these candidates had been subjected to several processes of elimination:

(*a*) They had to be invited to appear for examination by the Surgeon-General, and unless they appeared to be probably desirable, this invitation might not be forthcoming.

(*b*) They had to be graduates of reputable medical colleges, which ordinarily eliminated men coming from institutions of poor character.

(*c*) They had to be licensed to practice in the state in which they lived, which would exclude medical graduates who had been found later to be not thoroughly qualified.

(*d*) They had to be in the active practice of their profession, thereby excluding the failures in medical practice who were making their living by some other vocation.

(*e*) They had to pass an examination before a local board, which had to be satisfied with their professional, physical and moral qualifications. Here occurred the greatest number of rejections, for the local board was in position not only to test out qualifications by examination, but in many instances it knew the candidate personally or by reputation, and was well informed as to his antecedent activities and conduct.

(*f*) Further, before being commissioned, the American Medical Association investigated and reported on their cases, to make sure that there was nothing in their career which should render undesirable their appointment as medical officers.

(*g*) Finally, the Surgeon-General had the right of rejection, which was exercised in the case of men who ultimately appeared from their papers to be not qualified for the service.

It is apparent, therefore, that a large proportion of the undesirables of the medical profession were excluded from service and never reached a medical training camp. The latter, therefore, dealt with an already selected class. That this selected class presented still further professional deficiencies invites reflection on the part of all those in charge of medical education.

ELIMINATION OF THE UNFIT

In spite of all the foregoing factors of preliminary elimination, not a few medical officers reported at medical training camps who were found by the examining boards there not fit for service. The number of those who were disqualified for professional reasons is not known. Further, figures on this point which may be later available will tend to underestimate professional inefficiency, for when men seemed professionally disqualified the tendency was to discharge them for physical disability if reason for such could be found to exist. This saved the reputation for professional competence of the rejected candidate after he returned to his home. This charitable method of disposal could be carried out more commonly than one might think, as many of the poorly qualified men were graduates of the poor schools of the past generation, were elderly, of sedentary habits, and often obese or with some pathologic condition or organic defect more common in the elderly.

This practice of rejecting the undesirables for physical rather than professional reasons, if the former was possible, was probably also common among local examining boards undesirous of provoking personal antagonisms and local criticism. For a physician to be found physically unfit for service carried no stigma—professional rejection did. Between the two horns of the dilemma, the choice tended to be along the easiest way for all concerned. But in any consideration of professional education and efficiency, these facts should not be overlooked.

As soon as the medical training camps had begun to function, it became apparent that one of their important fields of usefulness would be to act as filters to determine and eliminate the unfit. The commandants of the several camps accordingly appointed examining boards to examine all student officers, and on their recommendations reported for discharge all whom these boards found disqualified for service in any capacity.

These boards for some time were not fully accepted by the specialists' divisions of the Surgeon-General's Office, which had card indexed the men whose reputations seemed to warrant their acceptance as specialists. However, so many of these men were found, on examination, to be overrated by their reputations, that the specialists' divisions finally agreed to make their appointments as specialists tentative and subject to the examination held by their representatives on the general examining boards at training camps. The number of men claiming a specialty and not found qualified is given later. The number was considerable. It is interesting to note that a few alleged specialists were even found by the camp examining board unfit to practice any branch of medicine in the service. The others not qualifying were recommended for release from specialty and made available for general assignment. One deduction is that the general reputation of a man is not necessarily a criterion of his actual qualifications. Another, that in their estimates of each other gained by ordinary contact, physicians are not infallible. Another, that a large number of men actually practicing as specialists in this country, and generally accepted as such, are not duly qualified as the experts they are supposed to be. The latter point is one of special interest and concern to those interested in postgraduate and specialist education in this country.

In May, 1917, department surgeons were provided with a systematized course of instruction, necessarily largely a matter of personal reading, which was to be carried out by medical officers at the military posts and relatively small stations under their jurisdiction. Commanding officers were made responsible for the effective carrying out of this course to the extent practicable under local conditions. The Inspector-Generals were also charged with seeing that this work was carried out.

Toward the end of 1917, it became probable that a campaign of public criticism against the professional competence of medical officers was about to be prosecuted. It is believed that this was one phase of systematic German propaganda. To forestall this, medical "training officers" were put in every division and large medical organizations, whose business it was to determine defects, outline remedial instruction, and see that that qualification was insured by certification by a local board of examiners.

During the eight months of 1917, there were issued five orders or circulars to promote the instruction of medical officers and secure the elimination of those who could not be qualified. These were evoked by the fact that the qualifications of medical officers actually commissioned for service were not, as a whole, satisfactory. The intent of the foregoing orders was to reach out, determine the proficiency of all medical officers except those overseas, and either rectify their faults or cause their elimination from the service. Those eliminated were discharged for professional, physical or moral deficiencies; they were not discharged for ignorance of military methods and affairs, for it was realized that all were necessarily learners in such respects.

In connection with the examination of medical officers at the medical training camps, the need for medical officers, which always exceeded the supply, had to be borne in mind. It was realized that the Medical Department had a multiplicity of functions to be performed, some of which required the possession of a certain medical knowledge without necessarily a high degree of efficiency. There were, for example, many executive positions in hospitals and other formations to fill, recruits were to be examined, sanitation to be maintained, and enlisted men to be instructed and controlled.

EMPLOYMENT OF PARTIALLY QUALIFIED MEN

Instead of the uniform rejection from the service of all who were not fully qualified for the general practice of the medical profession, it was accordingly early recognized that there were "misfits" as well as "unfits." Partially qualified medical men were not without value. Experience proved that it was possible to economize in personnel without detriment to the efficiency of the medical service by placing the less well qualified men in positions of restricted professional activity where they could be of as much use as the better qualified men, who might thereby be released for higher professional duties. These men of less professional competence were assigned to special duties for which high professional competence was not essential. Frequently this was an advantage. The country doctors who had retrograded professionally might have an excellent ability to handle men and transport, and accordingly might be safely assigned as junior officers in ambulance companies. Some were good executives and made successes as adjutants. Others could safely be trusted with certain work in the examination of troops. Some could be trained in sanitary inspection, and took to this work with avidity and efficiency. All this is mentioned to emphasize the fact that even by boards in training camps, medical officers not fully qualified professionally were often not rejected but advantageously held to certain medicomilitary duties, although their examinations showed that in purely professional matters they were not properly qualified to practice.

Any later figures for discharge from the service for professional inefficiency must therefore be recognized as by no means including all the professionally inefficient, many of whom were held to duties which were executive or only semimedical in character, or in which only an elementary or highly restricted medical service was required. It can never be known how many of these substandard men were held in the service in this manner. I would hazard a guess that perhaps 10 per cent. of these who came to training camps fell within this class. In any consideration of the efficiency of methods of medical education in this country, they could not be disregarded; for if the Medical Department had no other duties to perform than the professional care of the sick, this class of officers would have had to be rejected.

The same principle was applied about the end of 1917 to the medical personnel with troops and hospitals. Orders directed the transfer to divisions of medical officers in hospitals who seemed not adapted to the latter work; conversely, as certain professionally well qualified men seemed physically or temperamentally unsuited to service with troops, division surgeons were ordered to transfer such to hospitals. No officer was to be discharged unless he was found unsuited for the performance of any duty under the Medical Department in both these classes of service. The results in numbers so discharged are not known. It is believed that the number of unfit so eliminated was not inconsiderable.

RECLAMATION WORK

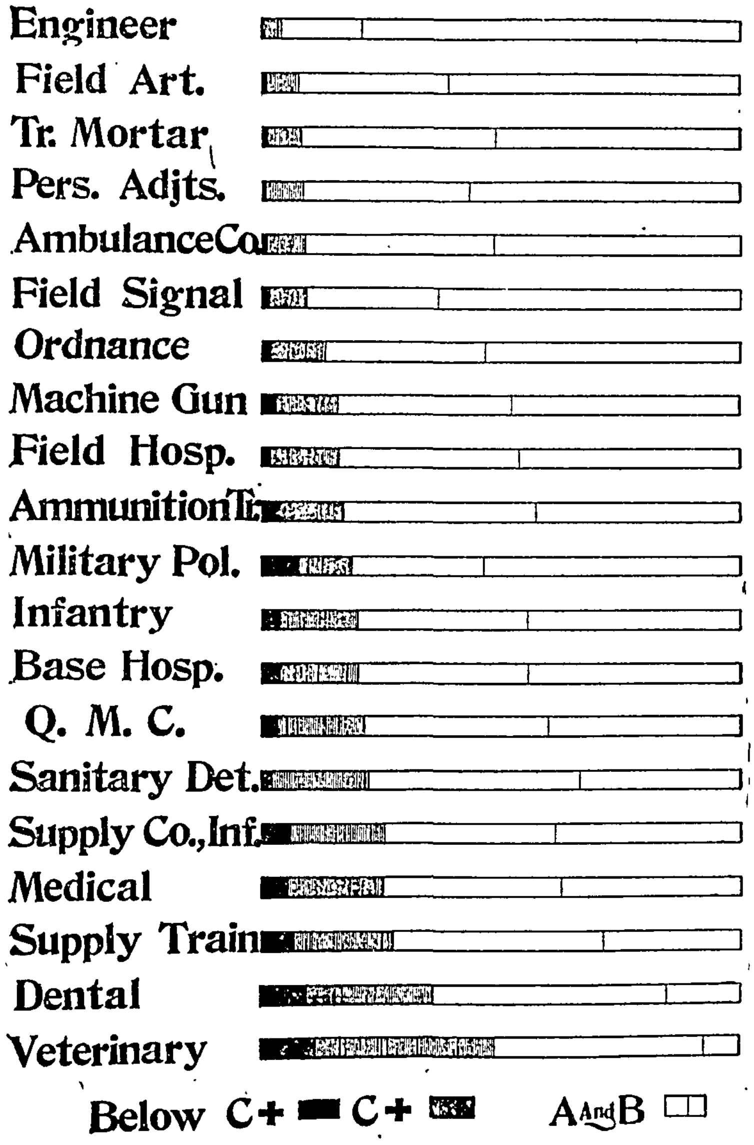
The medical examining boards at camps were further confronted with a class which was at once not qualified to be professionally passed, yet presented possible susceptibility to improvement and was too good to be discarded summarily. Accordingly, "salvage classes" were started, the members of which were systematically and intensively quizzed by expert quizmasters. This reclamation work had to be carried on in conjunction with more or less of the camp general curriculum, and called for interest and effort by all concerned. The men assigned to join these salvage classes were those who seemed bright and energetic enough, but who, for one reason or another, had not kept up with medical progress along certain lines. The subjects in which they were quizzed were only those in which they were found deficient. The great majority welcomed the opportunity thus to refresh themselves. The reclamation course usually covered about three weeks, when the candidates were reexamined. Nearly all qualified at the later examinations. The number varied. At some times, the reclamation classes at Camp Greenleaf amounted to as much as 6 or 8 per cent. of the student officers' group.

This experience would seem to carry a moral for medical educators. Have they not a field of usefulness in civil life whereby men who were originally qualified but who later deteriorated could have their deficiencies brought home to them and then effectively removed?

Much the same conditions in hospitals were met by orders early in November, 1917, by which it was contemplated that chiefs of service should seek out and see to the remedy as far as possible of the professional deficiencies of their subordinates.

QUALIFICATIONS OF CANDIDATES

The figures in Tables 1 and 2 are taken from reports by the board of examiners in session at Camp Greenleaf from Aug. 6, 1918, to Dec. 17, 1918, after which date no more candidates appeared. They show the relative classification by the board of accepted candidates. The examinations were searching, but thoroughly fair and practical. An expert in his line examined in each subject. The examination was practically standardized. Probably the qualifications of a large number of American practicing physicians and surgeons of the better class had never before been so thoroughly ascertained and fairly analyzed.



Proportion of high and low grades in various officer groups: The proportion of A grades varies from 8 to 79 per cent.; the proportion of A and B grades combined, from 52 to 96 per cent., and the proportion below B, from 4 to 48 per cent. Note the remarkably high ratings of engineer officers.

It is obvious that the board found the proportion of really high grade men in internal medicine to be small.

These figures include a few men qualifying for limited surgical work only, as abdominal surgery or orthopedic surgery.

They also indicate that only one medical officer in three was qualified to do independent surgery, and that only about 6 per cent. were really high class surgeons.

These examination findings seem to show that even with the quite carefully selected medical men entering the service, representing a type much better than the average of the profession, their qualifications, from the standpoint of both education and practice, cannot be considered satisfactory.

RELATION OF QUALIFICATIONS TO STANDARDS OF MEDICAL SCHOOLS

In a general way, it may be said that the general professional qualifications of officers bore a close relation to the educational standards of the schools from which they graduated. This was what would be expected. But various instances were noted in which graduates of good schools made a poor professional showing. Possibly an explanation might be that such men, while students under stimulation by the faculty, might do passable work, but that on graduation their natural inertia asserted itself, and not even professional competition furnished a sufficient incentive to them to keep abreast of medical progress.

The men from the poor schools naturally showed themselves less well qualified. Their professional foundation was poor, and the majority were permanently handicapped by it. On the other hand, their defects were perhaps not wholly the fault of the schools, for an able, ambitious man might, by his own initiative and later study, rise above his school environment. But the men from the poor schools were perhaps generally of a poorer type and not as alert mentally. The poorer schools very likely got men who were unable to succeed at better schools and were dropped therefrom. Some of these men were relatively sluggish mentally, and never had been provided by the Creator with the mental qualities necessary to the proper pursuit of medical science.

The thought is inevitable that medical schools should require a satisfactory psychologic rating for candidates for admission to a course leading to the degree of Doctor of Medicine, to make sure that they have the mental aptitude to qualify properly for it.

PSYCHOLOGIC TESTS

The psychologic tests of officers and men at Camp Lee, as shown on the accompanying chart, should be a shock to the complacency in this respect of our profession, for of all the different groups of officers at that camp, engineers, infantry, artillery, medical, etc., the group of physicians ranked lower in mental alertness than any other group of the military class, except the supply train, dentists and veterinarians. These scientific findings were abundantly borne out by experience, and if memory serves correctly, the chief surgeon at that camp recommended some 40 per cent. of his medical men for discharge as not qualified for service. This group of medical officers at Camp Lee was further investigated in a general way as to their antecedents, and was found to have largely come from poor schools and small communities and to have represented an exceptionally poor class of the general run of medical officers.

The question presents itself as to whether the medical schools are doing all that they should to keep out of the medical profession a class of men whose mental capacity is such that they can probably never rise to its opportunities and requirements. I believe that modern psychologic tests might be used with advantage to that end in respect to entrance examinations for medical schools.

QUALIFICATIONS OF ALLEGED SPECIALISTS

A very large proportion of alleged specialists were found in examination to be, in fact, only partly qualified. However, they had a basis of special knowledge of greater or less extent, and to render them properly qualified, special schools were organized to which approved candidates were sent by the examining board. These schools were staffed with the ablest professional specialists in the country, and there was a school for each specialty required in the army. Their courses were highly practical and intensive, and the student officers appreciated their great value. They met an obvious need. The thought presents itself as to whether the specialists' courses of instruction in the civil institutions in their country are doing the best that they might do along these lines. The thought also presents itself as to whether standards for specialists should not be higher, and whether some special recognition for excellence, such as the Doctor of Public Health degree given for demonstrated excellence in sanitary science, is not worthy of extension to other specialties. For a man to claim the qualities of an expert, even if his claims are accepted by the general public, does not make him an expert, and one of the chief functions of medical education is to safeguard the community.

TABLE 1.—CLASSIFICATION OF ACCEPTED CANDIDATES IN MEDICINE

Classification	Number	Per Cent. of Total
Qualified, plus	16	0.643
Qualified, good	216	8.176
Qualified	1,658	62.717
Qualified, junior	418	15.821
Qualified, junior, minus	334	12.641
Total	2,642	

Besides the general examining board at Camp Greenleaf, there was, as just intimated, a special board of professional experts which examined every officer reported by the Surgeon-General's Office as presumably qualified for a specialty. They also examined men claiming special competency in any subject, or referred to them by the general examining board as presenting qualifications worthy of further testing.

The results of the examinations of alleged specialists are given in Table 3. It is worthy of note that those rejected were not sufficiently well qualified to be recommended for special training in the courses in operation. In other words, they could not be considered as raw material, as being any more qualified for training in the specialties in which they claimed to be expert than was the average run of general practitioner. The approved men were sent to the specialists' courses for further instruction.

TABLE 2.—CLASSIFICATION OF ACCEPTED CANDIDATES IN SURGERY

Classification	Number	Per Cent. of Total
A plus	1	0.038
A	24	0.912
B	137	5.213
C	388	14.764
D	360	13.697
Qualified as assistant	590	22.450
Qualified as junior	937	35.654
Qualified as junior, minus	190	7.153
Qualified, minus	1	0.038
Total	2,628	

It is possible that some of these alleged experts claimed a special knowledge in the hope of being assigned to the special instruction course and thereby actually acquiring a specialty. In most instances in which a special knowledge was assumed, however, the student officer claimed to have been actually practicing the specialty. In some, the depths of ignorance were abysmal. I have knowledge of one examiner of international fame, ordinarily the essence of courtesy, who was impelled by the ignorance of a candidate who had been practicing as a specialist to say: "Doctor, by what assumption of impudence do you assume to claim yourself as a specialist?"

DEFICIENCIES OF MEDICAL EDUCATION

What has been said may be food for thought pending the accurate detailed statistical information which will later be available. Some of the deficiencies of medical education are apparent from the foregoing. Generally speaking, it would seem that the average physician has not been sufficiently well educated from a general standpoint, that the average facilities do not keep him abreast of medical progress, and that many men practicing as specialists need to be better trained. Specifically, the average physician knows little of preventive medicine, hygiene and sanitation, and these subjects should be given far more importance in the curriculums of medical schools than they are now receiving. It would seem that higher efficiency should be insured not only by the provision of appropriate facilities but also by more stringent examinations by the medical schools. The state boards have it in their power to insist on better qualifications for practice. The National Board of Medical Examiners can further the useful work by its standardizing of examinations, maintaining high professional ideals, and making its certificate the reward only of unusual professional excellence.

TABLE 3.—RESULTS OF EXAMINATIONS OF ALLEGED SPECIALISTS

Subject	Accepted	Rejected	Per Cent. Rejected
Ophthalmology	33	35	51
Plastic and oral surgery	44	27	38
Sanitation	44	17	28
Urology	100	18	15
Roentgen ray	83	4	4.6
Orthopedics	61	15	19
Otolaryngology	24	55	70
Neurology	8	2	20
Epidemiology	9	0	0
Anesthesia	22	5	18
Laboratory	19	4	17
Neurosurgery	10	1	9

CONCLUSION

I cannot forbear to express my admiration at the manner in which the profession in uniform adapted itself to conditions. Its members accepted cheerfully the results of the stock taking of their qualifications, even though the latter might not have been flattering. They cooperated in every way to remedy the defects thus made apparent. Their eyes were opened to any shortcomings of the profession as a whole, and it is safe to assume that their military experience has shaken them out of complacency, and given them new ideals and broader purposes. One of the results of the war will be a better and more competent medical profession, the members of which will look to the medical educators of the country to set high ideals and provide the facilities for their attainment.

Intermediate Host of Liver Fluke.—M. Muto has found that the *Clonorchis sinensis* has a second intermediate host. The first host is a river or lake snail; the second host a fish. The species of snails and fish involved are described in his report in the *Japan Medical World*, Feb. 2, 1919.

THE EPIDEMIC RESPIRATORY INFECTION AT CAMP CODY, N. M.

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CAMP CODY, DEMING, N. M.

Sept. 24, 1918, there was admitted to one of the general medical wards of this hospital a soldier who had just come from Camp Dix, N. J., with prisoners. He gave a history of having been sick for three days on the train with headache, rhinitis, general aching, soreness in the chest, and cough. In addition, he presented a well marked pharyngitis. Within twenty-four hours from admission, we were struck with certain unusual features which his case presented. The pulse was slow in proportion to the high temperature. The respiratory rate was greater than physical signs warranted, and the leukocyte count was 4,800. Repeated physical examinations on that day finally revealed a few crepitant râles near the angle of the right scapula. In the afternoon of this second day, cyanosis of the finger tips became noticeable, and an ashy color of the face appeared. The condition in the lung spread rapidly to the left lower lobe posteriorly, and on October 1 he died. This was our introduction to the acute respiratory disease which was then prevalent in the Northern and Eastern camps.

Our epidemic may be said to have begun, Oct. 1, 1918, with the admission of nine cases which were diagnosed influenza, and from the standpoint of this report, it closed, Dec. 1, 1918. During this period there were admitted to the hospital 3,265 cases; the day of the greatest number of admissions was October 26, when 378 patients came in. October 30, the hospital, though its normal capacity is 1,200 beds, was accommodating 2,153 patients, of whom 1,899 had influenza or pneumonia. In 624 instances, or 19 per cent. of the 3,265, pneumonia was diagnosed. Death occurred in 7.3 per cent. of the total number of cases admitted, and in 38.4 per cent. of the pneumonias. Two hundred and forty deaths was the toll during the period mentioned.

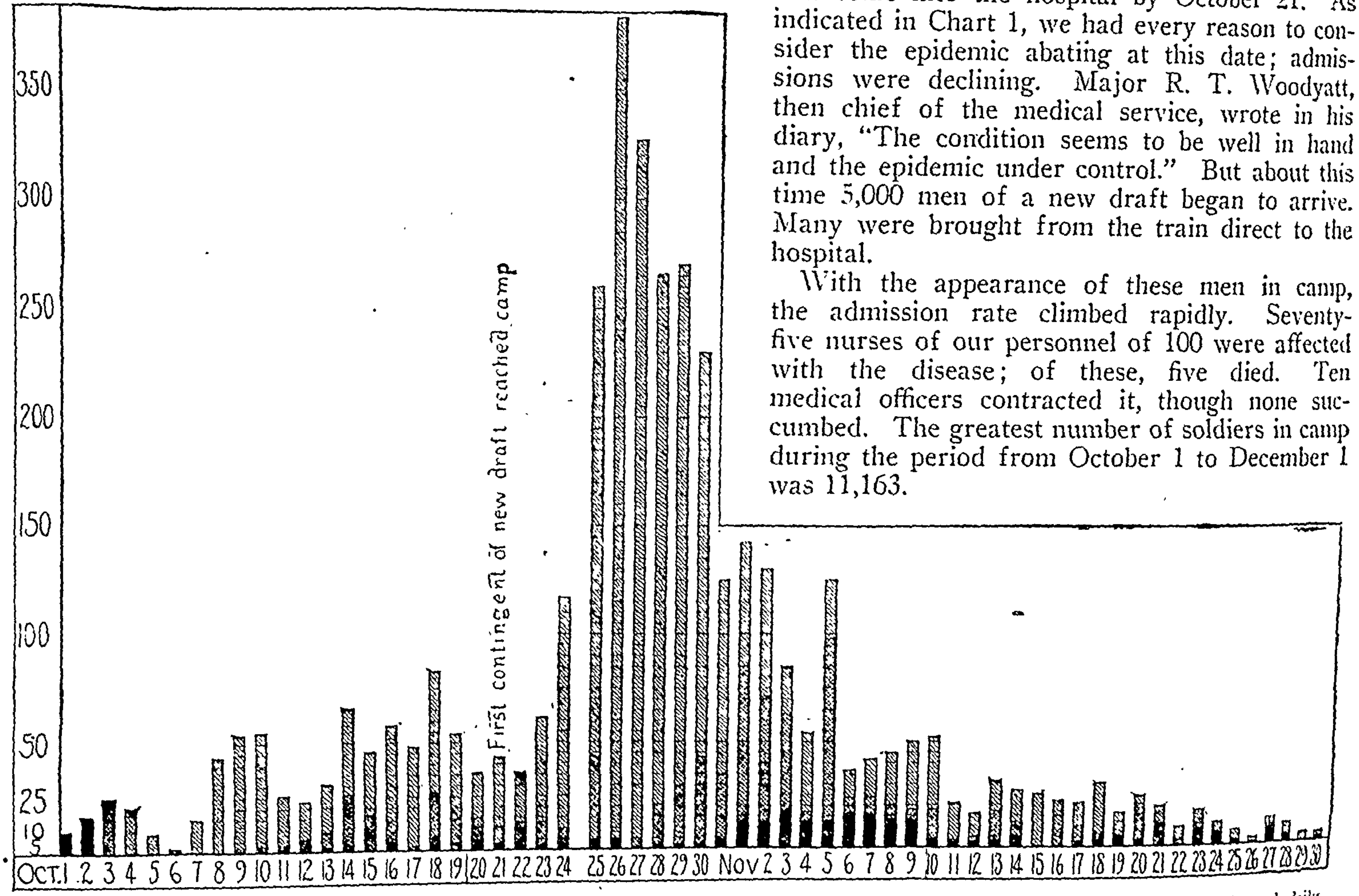

Chart 1.—Daily admissions for influenza (shown by diagonal shading), daily incidence of pneumonia (crossed shading), and daily deaths (solid black).

At the beginning of the epidemic there were 4,239 officers and men in the camp. Of this number 637 had come into the hospital by October 21. As indicated in Chart 1, we had every reason to consider the epidemic abating at this date; admissions were declining. Major R. T. Woodyatt, then chief of the medical service, wrote in his diary, "The condition seems to be well in hand and the epidemic under control." But about this time 5,000 men of a new draft began to arrive. Many were brought from the train direct to the hospital.

With the appearance of these men in camp, the admission rate climbed rapidly. Seventy-five nurses of our personnel of 100 were affected with the disease; of these, five died. Ten medical officers contracted it, though none succumbed. The greatest number of soldiers in camp during the period from October 1 to December 1 was 11,163.

ADMINISTRATIVE MEASURES FOR THE CONTROL OF THE EPIDEMIC

The camp authorities early instituted general measures to prevent the spread of the disease. Quarantine of the camp was established, congregations were prohibited, and a 5 foot space separated individuals at mess. Head to foot sleeping was insisted on. Bulletins were posted, giving instructions as to how best to avoid the infection and to keep up and improve the general health. Examinations were made twice a day of every soldier in the camp in order that detection of the disease in its incipience might be accomplished and new cases isolated promptly in the base hospital.

To the enlisted men an explanation was made of the early characteristics of the malady in order that it might be recognized, and they were urged to report to their medical officers for examination as soon as the symptoms were noted.

In the hospital, wards were designated for the isolation of these cases. Sheets were hung, providing a cubicle for each patient. Masks were worn by patients and their attendants at all times. Mess utensils were disinfected by boiling after each meal. The sputum cups were emptied and disinfected twice daily. Bags, with paper napkins, were used for the collection of nasal discharges. So far as possible, the air space allowance, as for pneumonia, was provided. Convalescents were not allowed to congregate in the wards, on the porches, or in the lavatories. A spray of dichloramin-T was used by nurses, attendants and officers. Antiseptic hand solutions were conveniently placed for those whose duties brought them into the ward. The wards were kept at an even temperature of about 80 F., though freely ventilated at all times. No patient was allowed to leave his bed until he had been forty-eight hours without fever. A convalescent hospital was established to which those patients whose condition, strength and period without abnormal temperature permitted it were sent in order to complete a ten day convalescence. To accommodate the vast number being admitted, beds were placed in the enlisted men's barracks, on porches, and in the corridors between the wards.

When pneumonia began to develop, special wards for the handling of these cases were set apart. Here too, the porches had to be used. During the height of the epidemic we were very grateful to receive the help of twenty-four nurses' aids sent by the Mountain Division of the Red Cross of Denver. Throughout the epidemic we received the cooperation and utmost assistance from the camp surgeon and other camp authorities. Medical officers from the 322d Sanitary Train and of the tuberculosis examining board were sent to assist in the wards. Their services were invaluable.

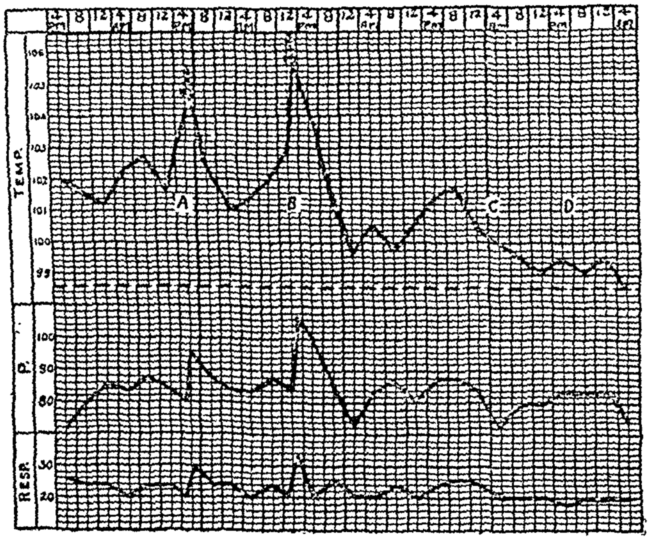

Chart 2.—Effect of an intravenous injection of bacterial filtrate: *A*, white blood count, 7,500; bacterial filtrate, 1 c.c. intravenously, 3 p. m.; *B*, white blood count, 10,000; bacterial filtrate, 2 c.c. intravenously, 1 p. m.; *C*, white blood count, 11,000; *D*, white blood count, 11,500.

LABORATORY FINDINGS IN INFLUENZA

Laboratory investigations were made during the first ten days of the epidemic in eighty typical cases of influenza. At the time of examination, none of these patients presented any physical signs of pneumonia or other complication. Nasopharyngeal and sputum cultures, blood cultures, blood counts and urine examinations were made in practically all of these cases.

Assuming that droplet infection was the most important factor in the dissemination of the disease, the bacterial florae of the nasopharynx and sputum were studied in detail. Nasopharyngeal swabs, obtained by means of West tubes, and specimens of sputum collected in sterile Petri dishes, were inoculated into blood agar and serum bouillon. Considerable pains were taken to identify colonies by subcultures in differentiating mediums. In order to gain some idea of the virulence of the organisms, fifty-eight white mice were given intraperitoneal injections of sputum.

It was found that there were five predominating pathogenic organisms: pneumococcus, *B. influenzae*, *Micrococcus catarrhalis*, staphylococcus and streptococcus, both hemolytic and nonhemolytic. Intraperitoneal inoculations of the pneumococcus, staphylococcus and both forms of streptococci were fatal to white mice. Injections of cultures of *B. influenzae* and *M. catarrhalis* produced only toxic symptoms in the mouse.

Nasopharynx and Sputum Cultures.—In eighty cases investigated, the organisms recovered from both the throat and sputum cultures showed the pneumococcus present in 90 per cent.; *B. influenzae* in 46 per cent.; *M. catarrhalis* in 84 per cent.; hemolytic streptococcus in 14 per cent.; nonhemolytic streptococcus in 26 per cent., and staphylococcus in 20 per cent. Colonies of both *B. influenzae* and pneumococcus were found in 41 per cent. of the plates. A few plates showed colonies of all these organisms. In many cases it was difficult to tell which was the predominating organism, and such a classification was given up as being unsatisfactory. Of the fifty-eight white mice that received intraperitoneal injections in 1 c.c. doses of ground sputum, nine, or 18 per cent., died. From seven of these the pneumococcus alone was recovered in the heart blood; from two, the pneumococcus and *B. influenzae* were recovered. The foregoing bacteriologic observations indicated to us that *B. influenzae* was not the specific organism.

Blood Cultures.—Fifty-four blood cultures were made in this series of eighty cases, all of which remained sterile.

Blood Counts.—The average of eighty leukocyte counts was 6,780. In fifty-four cases, or 67 per cent., the count was less than 8,000. The highest count of the series was 22,600, and the lowest 3,300. The differential count was not remarkable.

Urine Analysis.—Sixteen specimens, or 20 per cent. out of seventy-eight, showed a trace of albumin. Two cases showed considerably more than a trace, with a few granular and hyaline casts.

In connection with the experimental work, it is interesting to note that very soon after the epidemic of influenza reached this camp our laboratory guinea-pigs, housed in a small building beside the laboratory, began to die. At first it was thought to be the result of food poisoning, but a necropsy on a dead pig revealed unmistakable signs of pneumonia. The mucosae of the trachea and bronchi were deeply injected and covered with a glairy, serofibrinous exudate. Cultures and smears from this exudate and pieces of lung tissue revealed pneumococci in large numbers, a few streptococci and small bacilli, identical in every way with *B. influenzae*. These observations were confirmed in subsequent necropsies. The guinea-pigs were sick from two to four days before death. During this time, the sick animal trembling from chills, with hair ruffled, sat huddled up in a corner of the pen, moving about only to eat. This it would do until shortly before death. The respirations were rapid and wheezing; the characteristic shrill whistle became scarcely audible. The animal was apparently in a stupor which gradually deepened until death supervened. Altogether, it presented the picture of a profound intoxication. Just before death the animal would fall on one side, rise a time or two, then make a few feeble efforts to do so again. Within fifteen or thirty minutes it would die after several rather weak, clonic, convulsive movements.

All of the pigs in a batch of thirty died within three weeks. Fifty more were received from El Paso, Texas, just about this time, four of which were dead on arrival. The others were apparently healthy. These were placed in a different room of the animal house, which had not been in use for several months. It was thoroughly cleaned and supplied with fresh hay, which was changed daily. A heater was placed in the house, and every effort made to keep this new batch clean and healthful. No deaths occurred for about two weeks. One morning one pig was found dead, and within three weeks all of this second group had died just as the first had done. Segregating the sick animals did not save the others. It was planned by one of us (F. H. L.) to carry out a more detailed investigation of this epidemic among the animals which was so strikingly similar to the influenza epidemic in man, but an attack of influenzal pneumonia prevented the carrying out of the plan.

CLINICAL OBSERVATIONS OF INFLUENZA

Little need be said of the symptomatology of this disease. It differed in no particular, at this camp, from that reported in other localities. From the first, the symptoms were characteristic; there was little chance of confusing it with the ordinary respiratory infections.

The onset was more frequently sudden than otherwise, with chill or chilliness, cough, backache, headache, and pains in the chest and limbs. Coryza was frequently present, but the nasal discharge was of comparatively small amount. Injection of the pharyngeal mucous membrane was commonly noted. Epistaxis was not unusual. Physical examination of the chest was, as a rule, barren of results in the early stages, though occasionally sibilant and sonorous râles could be elicited. Gastro-intestinal symptoms, nausea and vomiting were uncommon. Aside from drowsiness and headache, few symptoms of nervous system involvement were noted. The pulse was remarkably slow. The respiratory rate was but slightly elevated, and the temperature range was from 100 to 104.

The course of the disease was from three to five days, with the temperature declining by sharp lysis in uncomplicated cases. Subsequent prostration was no more pronounced than would be expected in any febrile disturbance of the same duration. Few complications, other than that of pneumonia, were seen. Otitis media was present in a very small proportion of cases, and in these it was of low virulence. No death was ever attributed to influenza alone.

The treatment was symptomatic. Acetylsalicylic acid or acetylsalicylic acid and codein were used to relieve aching. Simple expectorants, with or without opium, were given for cough. Initial purgation with oil was routine. Food, liquid and soft, was given at frequent intervals, with night feedings to those whose condition was unsatisfactory.

PNEUMONIA

As mentioned above, pneumonia occurred in 624 instances. In type, it was with few exceptions of a lobular variety. Clinically, it was considered a hemorrhagic atypical bronchopneumonia. The massive consolidations were thought to be the result of the confluence of contiguous inflamed areas. It originated with equal frequency in the right and left basal lobes posteriorly. In only a very few cases was it noticed first in other locations.

TABLE 1.—COMPARISON OF TWO HUNDRED AND FORTY FATAL AND TWO HUNDRED AND FORTY NONFATAL PNEUMONIA CASES

	Fatal	Nonfatal
Number of days from pneumonia recognition to death.....	General average, 4.9 days	
Number of days from pneumonia recognition to normal temperature.......	....	General average, 3.9 days
Number of days in hospital before pneumonia occurred..............	General average, 3.8 days	General average, 4.0 days
Number of days with fever, dating from admission..........	General average, 8.5 days	General average, 7.9 days
Mental disturbance..	Recorded in 88 cases	Recorded in 13 cases
Pain in chest.........	Recorded in 33 cases	Recorded in 15 cases
Pulse.................	In 50% the rate was slow in proportion to temp. (exclusive of last 36 hrs.)	In 76% the rate was slow in proportion to temp. throughout entire illness
Respiration..........	In 68% of the cases the rate was over 36 per min. (exclusive of last 36 hrs.)	Only 16% of cases reached a rate of 36 per min. or over, during entire illness
Leukocytes...........	In 48% of cases the count was below 9,000; general average in uncomplicated deaths, 10,000	In 40% of cases the count was below 9,000; general average in uncomplicated cases, 11,400
Cyanosis.............	Recorded in 155 cases	Recorded in only 28 cases
Temperature.........	Higher level, 103 to 105 degrees with slight daily remissions	Lower level, 101 to 104 degrees with more marked daily remissions

In reviewing the records, certain interesting, though probably unimportant, figures have been obtained:

1. It was found that the average period of temperature, from admission into the hospital until death or normal temperature occurred, was approximately eight days.

2. The patients were, on an average, in the hospital four days before pneumonia began, or at least, until it was recognized.

3. From the date of recognition until death occurred, or until normal temperature was reached, was, respectively, 4.9 and 3.9 days.

Table 1 is interesting in that it indicates the symptoms on which prognosis depended, namely, respiration, cyanosis and a disturbance of mentality. We think that the leukocyte count comparison is of little value, as in most of the cases only one count was made, and that, soon after admission. The temperature in the fatal cases ran at a much higher level, in the majority of instances, than in the nonfatal ones.

The comparative bacteriology of the two series (the fatal and the nonfatal) is identical. Pneumococcus Type IV is the predominating organism in both, with the hemolytic and the nonhemolytic streptococcus frequently associated, and at times being independent. The presence of the latter organism did not seem to influence the mortality.

LABORATORY FINDINGS IN PNEUMONIA

With the development of pneumonia as the serious complication or sequel of a large number of influenzas, laboratory investigations were centered on these cases.

Blood Cultures.—Blood cultures were made in 248 cases of influenzal pneumonia. In only four of these, or 1.6 per cent., were organisms recovered, the findings being hemolytic streptococcus in one case and pneumococci in three cases, of which one was Type II, one, Type II, atypical, and one, Type IV. Many cultures made within a few hours before death remained sterile.

It was surprising to find such a small percentage of positive cultures in this epidemic. In two previous series (in the spring and summer of 1918) of pneumonia blood cultures, one consisting of ninety-two cases and the other of 180 cases, 26 and 18 per cent., respectively, were positive. The technic was the same for the two series.

Sputum.—The character of the sputum varied greatly. Many specimens were as thin and watery as saliva, and, being unfit for typing, had to be rejected. A fairly common specimen consisted of a few mucopurulent, slightly blood streaked, friable clumps floating in a thin, limpid liquid. These masses, when washed and ground, yielded fairly good typing specimens. The tenacious, glairy, blood streaked sputum, ordinarily seen in lobar pneumonia, was very rare in this series. The character of the sputum seemingly bore no constant relation to the bacterial flora.

Three hundred and forty-eight specimens were typed. Smears were made from the original specimens, blood plates poured and streaked, Avery's blood broth inoculated, and in about 50 per cent. white mice were given intraperitoneal injections to check the typing. On the whole, the typing was far less satisfactory in this series than it had been in the previous two series mentioned above. The readings of the agglutination and precipitin tests were far less clear cut. Yet the method used and personnel were the same.

TABLE 2.—TYPES OF PREDOMINATING ORGANISMS

Predominating Organisms Determined from Plates	*Number of Cases*		*Per Cent. of Total*	
Pneumococcus:				
Type I	9		2.60	
Type II	7		2.01	
Type II, atypical	24		6.89	
Type III	14		4.02	
Type IV	162		46.55	
		216		62.07
Streptococcus:				
Hemolytic	37		10.63	
Nonhemolytic	54		15.52	
		91		26.15
		307		
Predominance of any organism questionable		41		11.78
		348		100.00

Table 2 gives a percentage classification of the organisms predominating, so far as it was possible to determine predominance.

Table 3 shows the comparative frequency with which colonies of the five predominating organisms were found in the sputum cultures.

Blood Counts.—The average leukocyte count of 350 cases in the influenzal pneumonia wards was 9,480. Of these, 58 per cent. were 3,000 or under, and 73 per cent. were 12,000 or under. In only 5.4 per cent. was the count above 25,000 per cubic millimeter. This is a striking contrast to the high leukocytosis so universal in pneumonia.

PATHOLOGY AND POSTMORTEM BACTERIOLOGY

We were impressed with the fact that, taken as a whole, the patients who died were, if anything, somewhat better nourished and more robust than the average individual. The rapidity with which death took place precluded much external change. Postmortem lividity was usually marked; the finger nails and mucosae were very cyanotic. In about one half of the cases a foamy, blood-stained liquid ran from the nose and mouth when the head was lowered.

TABLE 3.—COMPARATIVE INCIDENCE OF THE FIVE MOST FREQUENTLY FOUND ORGANISMS

	Number of Cases	Per Cent.
Pneumococcus	310	89.1
Streptococcus	222	63.3
B. influenzae	89	23.0
M. catarrhalis	21	6.0
Staphylococcus	30	8.6

In all except one of the sixteen cases examined at necropsy, the postmortem picture was strikingly uniform. This exceptional case presented all the characteristics of a true, dry, lobar pneumonia. We shall try to describe the others as a group, limiting the detailed description to the respiratory tract.

The mucosae of the trachea and bronchi were intensely red, slightly edematous, and covered with a red, mucopurulent exudate. In many instances the smaller bronchi were filled with a red foam. The peribronchial lymph nodes were twice or three times normal size, very red, soft, and the cut surface granular. No changes were noted in the mediastinal space.

The lungs presented a picture quite distinct from anything we have seen before. The pathologic changes were certainly *not* those one is accustomed to see in the ordinary lobar pneumonia, nor were they typical of bronchopneumonia. In fact, the terminal hypostatic pneumonia, sometimes seen in the aged, compares more nearly, in gross characteristics, than does either of the other types.

In the fifteen cases that we have chosen to designate as *atypical, hemorrhagic bronchopneumonias*, the pneumonic process has been bilateral. In nine cases it was of nearly equal extent on the two sides; in six it was decidedly more pronounced on one side than on the other. In three cases there were extensive, dense, pleural adhesions; in four, there were recent, friable adhesions; in eight, the lungs were free. In two cases, there were 500 c.c. and 700 c.c. quantities, respectively, of a dark red, serosanguineous exudate. Both parietal and visceral pleurae were deeply injected. The lungs were voluminous and heavy. As a rule the posterior half or three fourths of the lung were a dark, purplish red, the remaining anterior portion, gray or pink. That this appearance was due to the filling of the posterior portion with dark red blood could be clearly demonstrated by an anteroposterior section. The posterior portion felt uniformly firm, yet somewhat resilient. The anterior part, especially of the middle and upper lobes, was elastic, soft, and air containing; here sometimes a discrete, irregular, consolidated area could be felt.

On section, a profuse bloody exudate welled from the cut surface of the consolidated portion. With slight pressure, 300 c.c. of this liquid could be drained from a single longitudinal section. That the firmest portions of the lung contained air could be demonstrated by the presence of numerous air bubbles in the exudate. Small sections from the more dense areas would barely sink in water; other sections floated. After the surface of a section had been squeezed and washed, the polygonal boundaries of the lobules could be plainly seen. A section through the anterior, air containing portion, which was rather sharply demarcated from the posterior consolidated portion, revealed a comparatively dry cut surface. Twelve out of thirty lungs presented peribronchial areas of consolidation from 1 to 4 cm. in diameter, in this air containing portion. The cut surfaces of these isolated areas bulged slightly, and were dark gray but not hemorrhagic. A mucopurulent exudate could be expressed from the bronchioles involved. These areas were typically those of bronchopneumonia. The marked hemorrhagic, edematous element was entirely lacking in this upper and anterior half of the lung; in fact, the gravitation of the blood and exudate to the posterior portion of the lung was striking.

TABLE 4.—POSTMORTEM BACTERIOLOGIC FINDINGS

Case Number	Organisms from Lung Cultures	Organisms from Heart's Blood
1	Pneumococcus Type II	Pneumococcus Type II
2	Pneumococcus Type III	Pneumococcus Type III
3	Pneumococcus Type IV	Pneumococcus Type IV
4	Pneumococcus Type IV	Pneumococcus Type IV
5	Pneumococcus Type IV	No growth
6	Pneumococcus Type IV and B. influenzae	Pneumococcus Type IV
7	Pneumococcus Type IV and B. influenzae	No growth
8	Streptococcus, nonhemolytic	No growth
9	Streptococcus, nonhemolytic and hemolytic	Streptococcus, hemolytic
10	Streptococcus, nonhemolytic and hemolytic	Streptococcus, nonhemolytic and hemolytic
11	Streptococcus, nonhemolytic and hemolytic	Streptococcus, nonhemolytic and hemolytic
12	Streptococcus, nonhemolytic and hemolytic, and pneumococcus	Streptococcus, nonhemolytic and hemolytic
13	Streptococcus, nonhemolytic and hemolytic, and pneumococcus	Streptococcus, nonhemolytic and hemolytic
14	Streptococcus, nonhemolytic and hemolytic, and pneumococcus	No growth

Gross changes in the heart or pericardium were not encountered. We found no evidences of dilatation on either side; the muscle was firm; the ventricles, usually contracted, contained a small amount of dark, semiclotted blood. The "chicken-fat" clots, often observed in pneumonia and slow deaths, were not found. Only the changes usually resulting from the toxemia of a severe infection were noted in the other viscera. We found no marked evidences of nephritis. The average weight of the spleen was 240 gm. It was usually of firm consistency; the cut surface moist and purplish red. A small amount of red, gruel-like pulp could be scraped from the surface. The bone marrow was pale, and quite noticeably dry: an observation in keeping with the leukopenia.

Bacteriologic cultures were made from the lungs and the heart's blood in fourteen cases.

CLINICAL OBSERVATIONS OF PNEUMONIA

In considering the clinical features, complications and treatment, we believe the value of personal observation will outweigh that of figures and statistics, since the attention to sick and dying men left insufficient time for the compilation of accurate data. It appeared, from the large number of cases (50 per cent.) that were definitely diagnosed as pneumonia, on the third, second and even the first day after admission, that many of them must be considered as primary lung infections and not in the light of true complications of influenza at all. We feel that this is true because with the onset of symptoms, soldiers from the camp were immediately sent into the hospital. Then too, in the majority of cases, there was no definite onset of pneumonia, as would be indicated by sudden increase of temperature, chill or other symptoms. Rather, there was from admission a gradually increasing toxemia, a gradual rise of temperature and respiratory rate, with the recognition of the existence of the lung disease dependent entirely, in most instances, on auscultatory findings. In 25 per cent. of the cases, however, there was a break in the temperature, a short remission or an intermission; then with a chill, an epistaxis, or a pulmonary hemorrhage there followed a sharp rise and the development of typical pneumonia findings.

Unquestionably, many patients diagnosed as having influenza of a severe type, who recovered and were sent to duty, had a slight pulmonary involvement which passed unrecognized. For this reason, it would seem that the mortality rate should be based on the total number of influenza cases admitted, rather than on the recognized pneumonia cases, since the recognition of the latter was dependent on the examiner's skill and the time he had to devote to each examination.

Physical Signs.—The earliest of the physical signs elicited and the one to which we attached the greatest importance was the finding of persistent showers of crepitant and subcrepitant râles. As the disease progressed, evidences of varying degrees of consolidation became manifest: bronchovesicular or bronchial breathing, increased voice and breath sounds, and dulness on percussion. Of the latter it may be said that the note was often almost flat, the result, evidently, of the intense inflammation of the lung and the filling of the vesicles and bronchioles with blood or exudate. Many cases were characterized by suppression of breath sounds, diminution of fremitus, and this dull-flat note. Often these findings led to unproductive aspiration. In only a few instances did the process stop with no other finding than that of crepitant râles.

The sputum, as a rule, differed from the thick, tenacious sputum of lobar pneumonia, in that it was more often purulent or, as seen in many cases, a thin, serosanguineous discharge. In some instances, large quantities of the latter type were expectorated, suggesting pulmonary edema by its fluidity, although it was not frothy. Nummular sputum was frequently seen.

One of the most interesting and alarming features was that of cyanosis. Often it was noticed before any other symptoms suggesting the serious condition of the patient manifested itself, and not infrequently even before the physical signs of pneumonia had been discovered. It varied in intensity from a slight duskiness of the face and finger-tips to that of the extreme grade in which the skin and mucous membrane were lilac. No satisfactory explanation of the exact cause of this cyanosis was given. It occurred in cases in which the lung involvement was slight. It was absent, at times, in cases with extensive lung involvement. It was not due to embarrassment of the right heart, as careful physical examination did not indicate right-sided failure of this organ. It was suggested by Major E. A. Duncan that the explanation was to be found in the action of the toxin on the alveolar epithelium, the resultant devitalization interfering with the normal functioning of these cells. The possibility of a vasodilatation leading to pulmonary congestion and edema also was suggested. Regardless of its cause, it was of ominous portent, and its clearing or absence was considered a very favorable omen. In Table 1 it will be noted that of the 240 patients that died, it was specifically noted in 155, and that, on the other hand, the records of an equal number of nonfatal cases mentioned it only twenty-eight times.

The respiratory rate, in our milder cases, was not greatly elevated. In fact, the records show that in 84 per cent. of the patients that recovered, it did not at any time go over 36 a minute. On the other hand, in the fatal cases the rate was high, and in 68 per cent. of these it was over 36, and this exclusive of the last thirty-six or forty-eight hours, when it frequently reached 50, 60 or even 70 a minute. The combination of cyanosis and dyspnea made the term of the older authors, "suffocative catarrh," particularly apt and expressive.

In the fatal cases the frequent appearance of indications of mental impairment was noteworthy. It varied in degree from simple drowsiness, as seen in the initial stages, to a slight mind wandering from which the individual might be called back to full consciousness by a spoken word. In some individuals it was manifested by a complete coma, and in others by an active delirium for which restraining sheets were necessary. This necessitated, in the severe cases, constant watching, since at times, patients, even in their terminal twenty-four hours, would attempt to leave their beds. In those that recovered, such symptoms were unusual; and when they did occur, the delirium was usually quiet. It was found in many of the patients presenting active mental symptoms, that there was an increase of intraspinal pressure with or without the evidence of actual meningitic inflammation. Unfortunately, the relief of this pressure by spinal puncture did not seem in any way to alleviate the disturbance. Associated in this syndrome there frequently appeared a general muscular tenseness, not often of sufficient degree to give rise to a positive Kernig's sign, but sufficient to offer resistance to every passive movement. Shivering, twitching, tremors and subsultus tendinum were present. These were considered cases of meningismus if the laboratory reported no increase in cell count or organisms in the spinal fluid.

Herpes was unusual. Jaundice occurred in a small percentage. Nausea and vomiting were infrequent. The cheek flushing of lobar pneumonia was seldom observed. When seen, it was most often found that a pleural effusion complicated the pneumonia. Practically all of the patients developing empyema showed this symptom. No purpuric spots were noticed. In the most serious cases the temperature was high with slight morning remissions. A few, however, had a low temperature notwithstanding their dangerous physical condition. Mouth temperatures in the moribund were very unreliable. The difference between the temperature curve of the severe and of the mild case was not so much in the height of the afternoon temperature as in the degree of the remission.

Termination.—Crisis was very unusual, lysis being the rule. Death, in the majority of instances, was quiet and easy. The pain in the chest, which had so often annoyed in the early stages, had been relieved probably by slight fluid accumulation; the toxemia or the products of semiasphyxiation had so benumbed the sensorium that the patient, unmindful of his dyspnea, died in comparative comfort.

COMPLICATIONS

Of the complications, the most frequent was that of pleuritis with exudate. In the group of fatal cases, a serofibrinous effusion of sufficient quantity to merit attention was recorded in twenty instances. Seven of these became purulent. In the nonfatal group it was more common, and resulted in thirty empyemas. The bacteriology of the fluids examined showed the streptococcus to be present alone in 36 per cent., the pneumococcus alone in 36 per cent., the streptococcus and pneumococcus associated in 20 per cent., and the staphylococcus in 8 per cent. A striking feature was the frequency with which the accumulation, probably beginning in a fissure, would press the lobes apart, giving a V-shaped area of fluid as seen with the roentgen ray, with the point of the V at the hilum of the lung and the open part at the chest wall. Physical examination in these cases naturally showed an area of compressed lung both above and below the fluid.

Otitis media was infrequent, although next in incidence, to the pleurisy. Phlebitis of the left leg occurred in three instances. Furunculosis and a tendency to small abscess formation was noted in a few cases. One case of cerebral thrombosis was recorded. Pulmonary edema, as a terminal condition, was often seen. Pericarditis was not found, and but one instance of acute endocarditis was observed. Meningitis with pneumococci in the fluid was recorded seven times.

Relapses or recurrences were unusual. Remissions in the severity of the process with subsequent intensification of symptoms, as early involved lung areas improved and new areas became infected, were seldom observed. Two cases of subcutaneous emphysema were recorded; both patients recovered. Spontaneous pneumothorax occurred in two instances. The picture of mild neurocirculatory asthenia was seen many times in convalescents. Reactivated, chronic tuberculosis was an unusual finding, in spite of the fact that many of our patients had never had their induction examination. Very few mental or nervous sequelae came to our attention. It was not unusual to find, long after recovery, the persistence of the physical signs of fluid in the bases, in patients in whom repeated aspiration had failed to establish its presence. We thought that this was due more often to a fibrinous pleural exudate than to an unresolved pneumonic process. Crepitant and subcrepitant râles in the bases were found in some instances to persist for a period of four or five weeks from the onset of normal temperature.

TREATMENT

General Measures.— The routine inaugurated early in the epidemic consisted of free ventilation; abundance of nourishing, easily digestible food; large fluid intake; absolute confinement in bed until convalescence was well established, and hydrotherapy for fever and nervous symptoms. Acetylsalicylic acid was discontinued on the diagnosis of pulmonary disease. The cough was controlled by an expectorant syrup, supplemented with heroin or codein, if its severity so demanded. All patients were digitalized if there was any indication of circulatory embarrassment. Whisky, camphor in oil, strychnin, caffein, atropin, epinephrin and pituitary solution were the stimulants in use. It was discouraging to note a lack of effect from any of them so many times, when stimulation was most urgently needed. Of these, it seemed that atropin was probably the most efficacious. An improvement, though temporary, in the cyanosis and dyspnea sometimes followed its use. No benefit from digitalis hypodermically or by mouth was ever established. Venesection was done but once. In a few cases, oxygen was administered; but as no improvement was noted, its use was discontinued.

Foreign Protein Treatment.—Early in October, a suggestion was made that immune serums, regardless of their nature, might be beneficial. The disease was characterized by a failure of response of the body's defensive forces. There was a leukopenia, a vasodilatation, an asthenia, and a pronounced hemorrhagic tendency. With these facts before us, we began the use of diphtheria antitoxin, hoping thereby, to increase the production of antibodies. Sensitization tests were carried out by a small subcutaneous injection. If in an hour no indications of anaphylaxis appeared, 10 c.c. were administered by vein. In forty-five minutes a sharp reaction (chill, fever and sweat) usually began. At the end of from twenty-four to forty-eight hours, if no marked improvement was observed, or if the patient was not moribund, a second dose was given. Only in exceptional instances were more than two doses used. With the progress of the epidemic and with the influx of hundreds of pneumonias, other varieties of protein were employed, such as antimeningococcic, antitetanic and antipneumococcic serums, and late in the epidemic the use of a bacterial filtrate was instituted. The latter substance, prepared from the organisms commonly present in influenza and pneumonia, was obtained from the laboratory of Dr. A. F. Schafer, Bakersfield, Calif.

In view of our death rate, which we know was about the average of that of other camps, we can scarcely make great claims for this treatment, for which we claim no originality. Nevertheless, certain conclusions are definitely fixed in the minds of the medical attendants who use it here :

1. Many cases, which appeared at their onset to be of the malignant type, would after its use show an improvement (often unexpected), with subsequent recovery.
2. No improvement resulted unless a reaction occurred. For this reason we were partial to the more concentrated products (diphtheria serum and bacterial filtrate.)
3. The same benefit was derived from the antimeningococcic, antitetantic and antidiptheritic as from the antipneumococcic serum, provided a satisfactory general reaction resulted. In other words, there was no apparent specific action of any type of serum, but the result was dependent entirely on its protein content.
4. Early administration was essential to effectiveness.
5. No harm, attributable to their use, was ever observed.
6. From the use of the serums there seemed to be a lessening of the hemorrhagic tendency.
7. While an artificial crisis was desired and anticipated, more often, when benefit did result, it came as a gradual reduction in toxemia, in temperature, and in respiration.

Of these products the bacterial filtrate was unquestionably the most satisfactory. Its concentration, the sharp reaction produced, the ease of administration (from 0.5 to 1 c.c. intravenously being used as an initial dose), and the absence of disagreeable urticarial or arthritic sequelae, all being in its favor. We regret that the stress of the epidemic prevented systematic, scientific observations of the factors that brought about the improvement and of the changes that resulted from the use of this treatment. But we who used it have definitely concluded that it was of no uncertain value in selected cases, though not by any means as much so as we optimistically felt in its inauguration.

NONTRAUMATIC HEMORRHAGE OF THE SUPRARENAL

REPORT OF CASE

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While small hemorrhages into the suprarenal, ranging in size from a pea to a walnut, have been found not infrequently postmortem, acute hemorrhagic suprarenalitis, and more especially large nontraumatic hemorrhages, are rare. The fact that in this instance *Streptococcus hemolyticus* was isolated from the blood both antemortem and postmortem, and that the case followed shortly on an epidemic of empyema at Camp Dodge due to the same organism, leads to the supposition that this organism was the exciting cause. It seems reasonable to assume that by lodgment of a bacterial embolus either in a vessel wall or a vessel itself, a dissolution of the vessel occurred resulting in hemorrhage and death. The clinical picture up to a few hours before death was that of a severe septicemia, and such was the antemortem diagnosis.

REPORT OF CASE

History.—G. S., 2704293, white man, aged 27, born in South Dakota, was admitted to the base hospital at Camp Dodge, July 17, 1918, with the diagnosis, "Felon, third finger, right hand." The mother and father, four brothers and two sisters were all living and well. Two sisters died in infancy, cause unknown. In 1910, following an acute follicular tonsillitis, the patient suffered from a mild polyarthritis which even now occasionally manifested itself by fleeting joint pains. His habits were regular. He denied venereal infection. Triple typhoid inoculation had been performed, July 1, 1918.

Course of Illness.—July 20, the felon for which the patient was admitted to the hospital was incised. Because of a recurrence it was opened again, August 16. Roentgenoscopy at this time revealed some rarefaction of the distal phalanx but no outspoken evidences of osteomyelitis. No cultures were made.

August 19, the patient developed a typical follicular tonsillitis with its concomitant symptoms and a temperature of 100.3 F. From the crypts, *Streptococcus hemolyticus* was isolated.

August 20, there was a marked general improvement; the temperature was 99, the pulse 76, and the respiration 20. This encouraged us in the belief that the entire condition was a result of the tonsillar infection. That evening at 10 o'clock the patient had a severe chill lasting fifteen minutes, followed by a succession of chilly sensations. He complained of headache, generalized aching pains, and fever. His temperature was 105.2, pulse 94, and respiration 28. A general physical examination disclosed nothing other than the tonsillitis.

August 22, he complained of weakness, fever, malaise and general aching, more severe across the lumbar region. About midday a profuse nosebleed occurred which seemed to come from an erosion of the septum. There was nothing further on physical examination. In the morning the temperature was 104.8 F., with a pulse of 100, and respiration 32. It continued irregular throughout the day, falling to 100.4, with a pulse of 86 and respirations 24 in the evening. The white blood count was 10,200, with 76 per cent. polymorphonuclear cells, 14.5 per cent. small mononuclears, 7 per cent. large lymphocytes and 2.5 per cent. transitionals. The urine showed a trace of albumin, but otherwise was negative. Cultures were taken of the blood, urine and stool. From then on, the fever curve was irregular, ranging from 99.6 to 100.8, with a relatively slow pulse, from 78 to 104. No noteworthy changes occurred, however, until August 25.

August 25, the patient had another moderately profuse epistaxis, and complained of pain in the left side of the abdomen. The pain, not especially severe in its onset, continued as a steady, dull, dragging, pulling sensation, which at times became momentarily sharp and darting. It was most severe in the left flank, whence it radiated to the right iliac fossa and also to the lumbar region, where it took on the character of a severe lumbago. It passed from there down the posterior aspect of the left thigh as far as the knee. Examinations disclosed some changes. The face was flushed and the expression was bright but presented the appearance of one suffering from a severe intoxication. The left leg and thigh were semiflexed, extension exciting pain. The skin of the legs from the knees down, and likewise the forearms, was involved in a symmetrical erythema, over which areas were scattered a number of rose-colored, circinate lesions with a white center and a wheal-like periphery. They ranged in size from a split pea to a dime, were slightly elevated, and in most instances discrete and well defined. The lungs and heart were negative. The abdomen was a little distended and somewhat tense, but not rigid. Tenderness, not severe and rather diffuse, could be elicited only on pressure to the left of the umbilical area. Pressure and fist percussion over the lumbar muscles intensified the already present dull ache. The temperature, pulse and respiration in the morning were 104.8, 100 and 28, respectively, and in the afternoon 100, 78 and 24. In the evening it rose to 105.2, 104 and 30, following another severe chill. The leukocytes numbered 8,000, with 87 per cent. neutrophils, 2 per cent. basophils, 9 per cent. large lymphocytes and 2 per cent. small lymphocytes. The hemoglobin was 90 per cent. A single urine specimen showed some albumin and an occasional granular cast. The blood Wassermann test was negative, the Widal positive (the result of previous triple typhoid vaccination). The blood culture was negative for typhoid bacilli, but showed an easily recognizable *Streptococcus hemolyticus*. The stool culture was negative.

August 27, another chill occurred; but the symptoms and findings remained as described before, except that the muscular pains over the lumbar region became severe enough to require morphin.

August 28, the abdominal pain was marked, as was the pain in the lumbar region, which continued to radiate down the semiflexed left thigh. The patient's nutrition was still good, though the eyes were becoming glassy, the expression was listless, and the cheeks were sinking. The skin was dry and, though flushed, presented a brownish green, murky appearance. His sleep, which was almost constant, was interrupted by a low muttering delirium. The abdomen was distended as from a moderate degree of tympanites, but showed no dulness nor tumors, and only slight tenderness. The temperature continued irregular and the pulse relatively slow. The white blood count was 8,000 and the differential showed 52.5 per cent. neutrophils, 2 per cent. eosinophils, 11 per cent. large lymphocytes and 34.5 per cent. small mononuclears. The patient rested through the night under the influence of morphin.

August 29, at about 7 a. m., he awakened in a delirium with a temperature of 105.4, pulse 130, and respirations 32, complaining bitterly of pain in the back and the abdomen. His condition continued to become worse, and at 8 o'clock, at which time he was examined, he had sunk into coma. The eyes were glassy and white; the countenance was expressionless. The skin was ashen white, cold and clammy; the temperature was subnormal, the pulse small, weak and thready. The heart tones were slightly ringing in character, but weak and distant. The abdomen was much distended and tympanitic on percussion. No tenderness could be elicited. The patient died at 8:45 a. m.

Postmortem Examination.—External Appearance: The body was that of a well nourished, well built, young white man of approximately 183 pounds and 5 feet 10 inches long. Postmortem lividity and rigidity were present to a moderate degree. The skin was markedly blanched, but free from any lesions. The head was negative; the pupils were dilated and equal, and the teeth were in good repair. There was no palpable enlargement of any of the subcutaneous lymph nodes, and the genitalia were normal.

Body Cavities: The lungs and pleurae were normal. The heart musculature was pale and flabby; the valves were normal. The intestine was well distended and had a dry, pale appearance. With a single exception the parietal and visceral peritoneum was free from any gross lesions. In the right iliac region, on the under side of a loop of the midportion of the jejunum, agglutinating it to its supporting mesentery, was a small, circular, fibrinous exudate about 1 cm. in diameter which was surrounded by a zone of hyperemia. The intestine is separated with ease from the mesentery, and the lesion was found to involve merely the peritoneal coverings, though the bowel at this point presented a very small area of capillary congestion.

However, the greater part of the pathologic anatomy concerned itself with the condition and the position of the descending colon and the underlying hematoma. The hematoma, well confined retroperitoneally, extended from the brim of the pelvis on the left to the splenic flexure, and thence to a point in the epigastrium 4 cm. to the right of the median line in the region of the descending portion of the duodenum. It was pyramidal, each aspect, the medial and lateral, being covered by peritoneum, the separated folds of the mesocolon. The base measured 18 cm. in width. Along the entire summit the colon could be traced, having been raised a distance of 10 cm. from its normal position. The peritoneal covering of the bowel was stripped from the muscularis by the infiltrating blood tumor, which so enveloped it that only the anterior third of the circumference could be recognized.

Opening of the tumor revealed masses of clotted and some unclotted blood supported by the areolar and connective tissue it had infiltrated. The mesenteric veins and arteries were free from clots; the ascending and transverse portion of the large bowel was highly blood-stained, but otherwise free from tangible lesions. Over the pancreas external to its areolar tissue capsule the tissue was infiltrated with blood, and the peritoneal envelop of the duodenum presented an infiltration of blood under its surface. The fatty capsule of the left kidney had lost all semblance of its former self, appearing as a large, loosely gnarled mass of shredded fibrous and areolar tissue seeped in blood. In its meshes were embedded many dark red clots. Hematoma was formed from about 3,000 c.c. of blood.

On the mesial border of the left suprarenal in its anterior surface was a rent 1.5 cm. in length and 0.2 cm. in width running longitudinally. It extended through the cortex into the medulla, communicating with a small cavity 0.5 cm. in diameter. This cavity contained some liquid blood. On section the cortex about this area was blood-stained. No ruptured vessel could be found.

Microscopic Examination.—This in no way increased our knowledge as to the exact cause or origin of the hemorrhage. The medulla gave no evidence of containing more than the normal amount of blood. Between the rows of the cells of the cortex and along the paths of the afferent vessels were myriads of red blood cells, some in clusters, others distr[illegible] sparingly. [illegible] condition was most pronounced in [illegible] reticular [illegible]re the enmeshing reticulum was [illegible] loaded wit[illegible] [illegible] Th[illegible] [illegible]arenchymal cells were intact everywhere except those bordering on the margin of the small cavity. Here they showed some destruction.

The liver and the kidneys were pale and showed a moderate degree of cloudy swelling.

The spleen had the character of an acute splenic tumor.

RECURRENCE OF ORAL SYPHILITIC LESIONS DURING TREATMENT WITH MERCURY

REPORT OF THREE CASES *

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AND
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Recurrence of lesions of the skin and of the mucous membranes during the course of an attack of syphilis while the case is off treatment are not uncommon, approximately 3 per cent. of the admissions to the syphilitic clinic of this hospital being of this character. The most frequent form taken by lesions of this type is chancre redux. Another common form is the sore or sores occurring close to but not on the site of the original primary infection which, as McDonagh[1] states, are probably due to autoreinfection.

Besides the lesions recurring in connection with the original primary infection, whether on the penis or elsewhere, recurrent signs of generalization, such as skin rashes, mucous patches and condylomas, are by no means infrequent. The history obtained in such cases is usually that at some considerable time previously, six months to a year or longer, the patient has received the full War Office course of treatment, consisting of seven injections of arsphenamin, totaling 2.8 gm., and eight injections of mercury, the whole course covering fifty-six days, and since the completion of this course no further treatment has been received.

The purpose of the War Office treatment has been to heal the open lesions as quickly as possible in order that the man may be available for active service. Since, with the completion of this course, the man usually receives no further treatment, owing to the exigencies of the service, it is not to be wondered at that such recurrences manifest themselves, as our present knowledge of syphilis indicates that such a course of treatment is of itself inadequate to cure the disease. In the case of those patients in whom it is possible to follow for some time the course of the disease, interrupted courses of mercury and potassium iodid are given, which consist of three months' treatment followed by three months' rest, the whole covering a period of several years, depending on the severity of the case before treatment is commenced.

With this and possibly with further courses of arsphenamin, should these seem to be indicated, it was hoped that the patient would obtain a complete cure. The maximum amount of arsphenamin, however, to be given in the first year was not to exceed eleven injections, totaling 4.6 gm., given over a period of ninety-one days; and in no succeeding year were there to be more than four injections, totaling 1.8 gm., over a period of twenty-eight days. The reason for this limitation of dosage was the occurrence of a number of cases of jaundice when larger total dosage was used within this time interval. Such treatment quickly heals the open lesions and usually renders the Wassermann test negative; but three cases treated in this hospital in the past year seem to point to the fact that not only is it not curative, but it will not prevent the recurrence of open lesions, particularly in the mouth:

REPORT OF CASES

Case 1.—Private B. was exposed in April, 1917, and had an incubation period of three weeks. The case generalized before treatment was commenced, signs of generalization being a commencing macular rash. The patient was given one full War Office course of arsphenamin and mercury, followed by mercury by mouth for six weeks. There was no recurrence until Jan. 1, 1918. Examination on admission to this hospital on that date revealed the scar of the original primary lesion on the penis at the frenum. On the lateral margin of the tongue there was a papulo-ulcerative sore, the base of which was dirty and the sore itself markedly indurated. The submaxillary glands were considerably enlarged. The sore was negative for *Spirochaeta pallida*. The Wassermann test, January 22, was + + +. The patient was placed on a full course of neo-arsphenamin and mercury, which was completed, March 12. The Wassermann test, April 4, was + +. April 9, the patient was placed on three months of mercury and potassium iodid. While on this course, after he had received seven injections of mercury of 1 grain each at weekly intervals, he developed on the dorsal surface of the tongue multiple shallow ulcerations each about the size of a pea. At the junctions of the hard and soft palate there was a mucous patch about 1 inch in diameter. These lesions were positive for *Spirochaeta pallida*. The same day he received 0.6 gm. of neo-arsphenamin and 1 grain of mercury intramuscularly. The lesions healed immediately. Two months later he received 1 grain of mercury and three weeks afterward 0.6 gm. of neo-arsphenamin. Six weeks after this injection he developed an ulcer on the hard palate in which *Spirochaeta pallida* was not found. Three days later he received 0.45 gm. of neo-arsphenamin, but the lesion was very slow in healing. The following month he developed jaundice and now, three months later, the patient has no open lesions. Neurologically and serologically his cerebrospinal system is negative, but his blood Wassermann test is + + +.

Case 2.—Private L. contracted syphilis in 1917. The incubation period covered two weeks. His condition was primary when treatment was commenced. After treatment with seven doses of arsphenamin and eight intramuscular injections of mercury, the Wassermann test was negative. One year later the patient developed signs of cerebrospinal involvement, and the Wassermann test was found to be positive. He received three doses of arsphenamin and four intramuscular injections of mercury. He was admitted to this hospital a month later. Examination on admission revealed no signs of syphilis except the scar of the original chancre, which was situated on the ventral surface of prepuce; he also had a positive cerebrospinal fluid. He was placed on an interrupted course of neo-arsphenamin with a dosage of 0.45 gm. at weekly intervals, and four intramuscular injections of mercury with a dosage of 1 grain at weekly intervals. When he had completed this interrupted course, Aug. 8, 1918, the Wassermann reaction was +. Four days later he commenced a three months' course of mercury and potassium iodid. Eleven days after he had finished his eight weeks of mercury and while still on potassium iodid he developed a large ulcer, half an inch in diameter, at the lateral margin of his tongue and extending to both dorsal and ventral surfaces. The base of the ulcer was dirty. This lesion was positive for *Spirochaeta pallida*. The same day he was placed on another interrupted course of neo-arsphenamin and mercury, and the lesion rapidly healed. Other shallow ulcerations then appeared on his tongue and the margins of the gums which were negative for *Spirochaeta pallida* but positive for the organisms of Vincent's angina. These lesions extended till they involved the whole of the posterior half of the tongue, the fauces, the nasal and oral pharynx, the mucous membrane of the cheeks, the upper part of the esophagus and larynx, and the periosteum of the angles of the lower jaw. The general condition resulting from these gangrenous lesions caused the patient's death. Throughout the whole of his treatment at this hospital he was receiving intraspinal injections of arsphenaminized serum for his cerebrospinal condition. At necropsy the scar of the syphilitic lesion was plainly visible on his tongue. The pathologist's report on sections of the scar was: "The epithelium has entirely disappeared. The exposed surface is composed of fibrous tissue, scattered throughout which are many polymorphous cells. Beneath the fibrous tissue the muscle fibers show slight degeneration interspersed with areas of round cell infiltration."

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* From the Syphilitic Clinic, Canadian Special Hospital, Etchinghill, Kent, England. [This hospital is the main center for treatment of venereal disease among the Canadian troops in England, with a capacity of 800 beds.—Ed.]

[1] McDonagh: Biology and Treatment of Venereal Diseases, London, Harrison & Sons, 1915, p. 321.

CASE 3.—Private K. contracted syphilis in June, 1917, the incubation period being six weeks. He treated the primary sore himself by cauterization, but as it would not heal he was admitted to the hospital in August, 1917, with generalized syphilis. Examination on admission disclosed two sores situated on the prepuce, with no induration. The glands were all enlarged and hard. He had a faint macular rash over the trunk, limbs and forehead, and there was a mucous patch at the angle of the mouth. The Wassermann reaction was + + +. He was placed on a full course of arsphenamin and mercury. At the completion of this course the lesions had healed, and the Wassermann reaction was negative. In February, 1918, his blood was found to be + + and he was given an interrupted course of an arsphenamin preparation and mercury. The Wassermann reaction at the completion of this was negative; nevertheless he was given three months of mercury and potassium iodid. The Wassermann reaction was again negative at the completion of the treatment. After three months of rest the blood was +, and a month later the reaction was the same. He was placed on three months more of mercury and potassium iodid, of which one dose of mercury was taken by injection and the rest by mouth. Two months and a half of this course had been completed when the patient developed several shallow ulcerations and mucous patches on the tip and the ventral surface of the tongue. These lesions were positive for *Spirochaeta pallida*. The blood at this time was variable, being negative, January 6, + on the 9th, and + on the 16th. He was placed on an interrupted course of arsphenamin, and in a few days after the first injection the lesions healed.

COMMENT

Were it not for the demonstration of *Spirochaeta pallida* one would be inclined to look on these lesions as the herpetic ulcerations which Hutchinson[2] states are of common occurrence in the mouths of patients suffering from syphilis, but the finding of the organism definitely vouches for their specificity.

All three cases are similar in that the patients had received the routine War Office treatment and were all on mercury and potassium iodid when the lesions developed. The lesions did not develop at the site of former lesions, but were of the type that McDonagh[1] designates as autoreinfection. In two of the cases the general health of the patients was poor, but in the third case the general health was apparently good. In one case there was a mild mercurial stomatitis which later developed into a severe Vincent's infection, but all three were receiving careful dental treatment.

Akatsu and Noguchi[3] have demonstrated that *Spirochaeta pallida* increases its resistance to both arsphenamin and mercury in vitro. There is no reason why this cannot occur in vivo, and in these cases the resistance was increased against the mercury owing to its prolonged use, while the spirochete disappeared and the lesions healed as soon as the patient was placed on arsphenamin. There was no increased resistance against the latter substance, as the patients had all been a considerable time without treatment by it. In these cases it seems very probable that the mercury lowered the tone of the tissues of the mouth; and *Spirochaeta pallida*, being mercury fast, was given a fertile field in which to grow.

SUGGESTED MODIFICATION OF WAR OFFICE TREATMENT

While we would be among the first to recognize and record our appreciation of the good work accomplished by the British War Office in its careful study of the methods of treating syphilis and the service that has been accomplished in standardizing that treatment for the army, we know that the leader in this movement, Col. L. W. Harrison, D. S. O., is himself among the first to seek criticism and to welcome suggestions making for improvement in the methods employed.

The fact that under the present treatment such recurrences are to be encountered leads us to suggest that the routine War Office treatment be replaced by the following: During the first three weeks the patient should receive three injections of arsphenamin at weekly intervals with a total dosage of 1.2 gm. For the first eight weeks he should receive 8 grains of mercury, given in 1 grain doses at weekly intervals, and potassium iodid. For the next four weeks he should be given a tonic. When the month of rest has expired he should receive a small dose of arsphenamin and a week later a full dose, and for eight weeks mercury and potassium iodid, followed by four weeks' rest and tonics. The purpose of the small dose of arsphenamin preceding the full one is to prevent the occurrence of a dangerous Herxheimer reaction. This treatment might be continued indefinitely, though it would probably be better to give three months' complete rest in twenty-four. The object of this method would be to heal the open lesions by the first three injections. The purpose of the continued use of mercury and potassium iodid would be to carry on the sterilization of the host. Should the spirochete, however, become mercury fast the arsphenamin would be able to attack it while freely multiplying as the adult form. With this method of treatment, if carried on over a sufficient period of time, it should be possible to produce a complete cure of the disease with the minimum of danger to the patient and without recurrences similar to the cases cited.

Adequate Medical Service.—In these days of progress in preventive medicine there is some tendency to separate too sharply preventive from curative medicine. It should not be forgotten that an adequate medical service to the whole people will do more to prevent disease and disability than any other single measure to be considered. At present the people in the United States are paying out money sufficient for the maintenance of an adequate medical service, but fail to receive it. This money, however, is spent in such a haphazard manner that the service is not only often inadequate or worthless, but at times actually harmful. For one item—drugs—the United States spends $500,000,000 a year. This sum alone, if properly expended, would buy all the necessary drugs and add $2,000 a year to the income of e
125,000 physicians in active practice in the Uni
B. S. Warren, M.D., *Public Health Reports.*

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[2] Hutchinson: Syphilis, London, Cassell & Co., 1909, p. 149.

[3] Akatsu and Noguchi: J. Exper. M. 25: 361, 1917.

ENTEROSTOMY AS AN EMERGENCY MEASURE

IN THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION IN CASES OF GENERAL PERITONITIS FOLLOWING PURULENT APPENDICITIS

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Every surgeon experienced in the treatment of appendicitis knows that this protean disease presents itself in one of its most serious aspects when attended by a diffuse peritonitis with intestinal obstruction and distention of the abdomen. These complications often exist before the patient is brought for operation, but also frequently arise postoperatively in purulent ruptured cases. The disease now is peritonitis and no longer simply appendicitis. In this paper it is our purpose to call attention to some facts concerning the management and surgical treatment of such cases, as based on personal experience.

During the past four years, in association with Drs. Stoecks and Maxwell, we have operated in 200 cases of appendicitis. In this group of 200 cases all types of pathologic appendixes were represented. In a general classification, however, there were ninety-nine chronic cases, fifty-one acute, but well walled off, cases, and fifty acute, gangrenous and purulent cases, with general peritonitis and no walling off. It is with the last group of fifty cases that this paper concerns itself. The reason for so high a percentage (25) of peritonitic cases lies in the fact that all these patients came for operation from neighboring smaller communities, often arriving for surgical treatment as late as a week or ten days after the initial symptoms had developed. This fact itself is a potent illustration of the urgent need of surgical intervention in appendicitis as soon as the diagnosis has been made.

PRIMARY OPERATION AND SUBSEQUENT TREATMENT

As a usual operative measure, no attempt at removal of the gangrenous or ruptured appendix was made unless it was easily accessible and could be removed without much manipulation of the inflamed bowel. Whether, however, the appendix was removed or not, at this primary operation the sole aim was always to establish thorough drainage. Removal of the appendix was merely an incidental matter as compared with the main purpose of the operation, namely, to provide the most ample outlet for the discharge of pus from the inflamed visceral and parietal peritoneum. This was done by placing through the incision three or four rubber drainage tubes as deeply as possible into the abdomen, an additional one into the pelvis, and at least one through a stab wound into the most dependent portion of the abdominal cavity. The abdominal incision was never sutured but kept widely open with gauze packing. After the packing had been correctly placed, deep through and through silkworm sutures were made to prevent the wound from gaping. Thus the bowels were retained securely, while they remained within easy access from without and could be kept under constant observation.

This operative procedure constituted in its essentials our primary operation. The patients were now kept in Fowler's position, and for a period of from twenty-four to forty-eight hours they were given warm saline by the rectal drip method. This is never given continuously but intermittently in amounts varying from 4 to 6 ounces every three to four hours. The continuous method has been found unsatisfactory because of the pain and discomfort to the patient from too long continued retention of the rectal tube, and also on account of the difficulty experienced in keeping the saline at a sufficiently warm and even temperature. Because of the ease with which the gauze packing could be removed from the open wound, opportunities were offered to study the behavior of the small and large bowel. This proved of particular value in a number of cases in which, subsequent to the primary operation, intestinal paralysis resulting in marked abdominal distention developed. Here it was possible to observe the distended bowel become gangrenous and perforate. Perforation would commonly occur only in one loop of the bowel and very rarely in several.

RESULT OF THE DEVELOPMENT OF SPONTANEOUS FECAL FISTULAS

Gangrene and distention usually went together. They always preceded perforation. Wherever the distention was most pronounced and the gangrene had progressed the farthest, perforation would occur. But no sooner did a spontaneous perforation occur anywhere, either in the ileum or in the colon, than the distended bowel through this newly formed outlet evacuated much gas and a foul smelling, greenish fluid. This varied in amount from a few ounces to several pints in different cases. This briefly described picture was observed in ten cases out of the present group of fifty. They were cases that came late to operation and presented not only a ruptured or gangrenous appendix, but also, as a direct result, a generalized peritonitis. Out of this there then developed that twin picture, intestinal paralysis and abdominal distention.

All of these patients had a severe generalized peritonitis. The abdomen was distended and rigid, often so much so that the descriptive expression "drumlike" is no exaggeration. Uncontrollable vomiting existed in combination with almost complete, and often with absolute, obstipation. Enemas gave no relief. In every respect the patients presented pictures of extreme prostration. As soon, however, as a spontaneous fecal fistula developed and a thorough evacuation of the putrefied intestinal contents resulted, this picture of a moribund condition changed perceptibly and rapidly for the better. Vomiting ceased, the abdomen softened, and in a surprisingly short time patients that had appeared at the point of collapse gave hardly a sign of their former grave condition.

All of these patients recovered after draining freely for from three to seven weeks. As soon as drainage stopped, a secondary operation, the details of which will be considered later, was done, and soon afterward the patients were discharged cured.

During this time eleven similar cases had been seen in consultation after operation. In these cases there was a mortality of nine. All deaths were due to a general peritonitis and insufficient drainage from the wound. These cases were so serious and far advanced that any further surgical intervention seemed impossible. Here the ruptured or gangrenous appendix had been removed, the wound closed in the usual manner, and only a single drainage tube put in place. And again it was noticed that these patients suffered from a tremendously distended abdomen, drumlike rigidity of the abdominal wall, cyanotic lips, and very little discharge from the drainage tube.

These patients were pictures of acute suffering which finally ended in death. Yet the cases differed in no detail from ours until the time that the spontaneous fecal fistulas developed. No sooner, however, had the fecal fistulas developed, and the bowels evacuated their foul contents, than the course was the antithesis of death. Thorough and ample drainage was not the explanation for the recovery, because when the condition has progressed to the stage of complete obstruction and intestinal paralysis, there is no more discharge of pus and exudate from the peritoneum, and at this time no amount of drainage provided is of any avail. These recoveries must rather be ascribed to the perforation of the distended and gangrenous bowel. The development of spontaneous fecal fistulas is the primary cause of the improvement in the clinical course. This received strong support from the two cases seen in consultation in which the patients recovered, in both of which fecal fistulas also developed, and recovery dated from the time when such spontaneous perforation occurred. Out of the nine patients seen in consultation that died, one other did develop a fecal fistula; but since in this case insufficient drainage from the abdominal cavity had been provided, it also terminated in death.

As far, then, as the recovery of these patients of our own series is concerned, it must be considered as primarily due to the development of a fecal fistula which allowed the evacuation of a large amount of gas and foul smelling, greenish intestinal contents, and secondarily to the early provision for thorough drainage afterward. That the last mentioned point is also extremely important was forcibly brought to mind in the one case in which a fecal fistula developed, but drainage insufficient to carry off the foul intestinal contents and discharge from the peritoneum had been provided.

CONDITION WITHIN THE ABDOMINAL CAVITY

These experiences, with our own and with the consultation cases, led to serious thinking regarding the possible actual conditions existing within the bowel and abdominal cavity. In certain patients it was observed that the entire bowel was distended, and again in others only small portions seemed to be affected. At times small portions were found which were firmly angulated so as to form short loops of distended bowel that appeared to be almost completely cut off from the remaining flattened portion. Again in some instances no outward signs of angulation were discernible, and still only short loops of bowel were gangrenous or distended.

There seem to be three hypotheses to explain this condition: First, that angulation of portions or paralysis of the entire bowel is primarily due to mechanical obstruction resulting possibly from fibrinous adhesions. Second, that it is due to the laming of the smooth muscular fibers by infiltration of the intestinal wall with inflammatory products from the intensely inflamed peritoneum. And third, that it may possibly be a direct result of absorbed toxins having their effect on the central nervous system and causing a paresis of the muscular nervous peristaltic apparatus. But these are questions the settlement of which is not here attempted. However, we observed that small portions of the bowel, almost always the ileum and rarely the colon, would angulate and become firmly matted together, being at the same time distended and gangrenous. Again, intervening portions showed no such condition beyond that of an inflamed visceral peritoneum. One is tempted, therefore, to believe strongly that the central nervous system plays no causative rôle whatever, but rather that the entire series of events must be due to local causes. There may be a plain mechanical obstruction due to angulation of the bowel as a result of fibrinous adhesions between intestinal loops, or to a paralysis of the smooth muscle fibers in the intestinal wall as a result of the intense infection involving the mucosa of the alimentary tract as well as its entire serous surface.

Such being the case, why should the surgeon idly sit by and see whether the resistance and strength of the patient is sufficient to overcome this widespread infection? Does it not seem much more logical to open this infected bowel or such portions of it as are necessary, to provide a free outlet for the infected and foul intestinal contents? Since it is sound surgical treatment to open and drain any other portion of the human anatomy in which toxic material collects and threatens life, it certainly must also be considered sound here. All the more is it true if by so doing the patient is directly and almost immediately benefited.

ARTIFICIAL FECAL FISTULAS

This was the general policy adopted in the extreme treatment of the remaining cases of this group, and artificial fecal fistulas were made in seventeen cases.

Indications for doing an enterostomy, accordingly, have been, first, a drumlike distention of the abdomen associated with uncontrollable black vomiting, particularly when no relief is obtained by gastric lavage; second, the existence of complete obstipation which in no wise yielded to any enema (the pulse and temperature play only a very negligible part in deciding on an enterostomy; many times these fail entirely to indicate the seriousness of the patient's condition); third and most important and as the chief indication, any marked diminution in the amount of drainage from the wound.

If there is not a general improvement of the patient with the decrease in drainage, then the surgeon should be in readiness at any time to perform an enterostomy. As a result, the indications for doing this operation may be thus summed up: If the wound is better and the general condition of the patient is worse, enterostomy is imperative.

Our experience with these patients has shown that an anesthetic is not necessary for enterostomy. Since the abdominal wound, except for silkworm sutures, was left wide open, the bowel can be easily reached through this original incision. The one essential, absolutely necessary, is that the fistula be made into a distended or bulging portion of the bowel. Perforation of a collapsed portion of intestine is of no value. If no well formed wall of adhesions exists, the bulging loop of intestine is brought up to the incision and sutured with one or two silk sutures into the open wound, and then the enterostomy is performed. Immediately a rubber drainage tube is inserted and sutured with catgut into this opening. The drainage tube is allowed to remain in place until the sutures have been absorbed, when it is gradually withdrawn.

This is not a temporary perforation which is to be immediately repaired as soon as the gas and intestinal contents have escaped, but is meant to be a permanent fecal fistula. It remains such until it closes of its own accord or, failing to do this, until a future date when a complete secondary repair operation is done.

All of this can easily be accomplished without an anesthetic and with very little extra discomfort to the patient.

Usually the prostration is so severe that such pain as is caused by one or two sutures to tie the loop of bowel to the abdominal wound is hardly noticed.

It is conceivable that, owing to extensive fibrinous adhesions, complete strangulation of a loop of bowel might occur and result in only a partial evacuation of the foul intestinal contents. However, this contingency was never encountered in our cases. Perforation of a single loop of intestine was always sufficient to remove the obstructive features in these cases.

The cases of artificial fistulas behaved similarly to those formed spontaneously. As soon as a thorough evacuation of the foul contents of the bowel had occurred, a marked improvement in the condition resulted. The abdominal distention was no longer so marked. Black and fecal vomiting ceased almost immediately, and the extreme prostration gave way to a decided feeling of improvement. Patients that had a marked cyanosis, rapid pulse and high respiratory rate returned in a short time to a normal color, slower pulse and moderate breathing.

These enterostomies were allowed to become permanent fecal fistulas. Our idea was not to perforate the bowel momentarily and allow a temporary escape of gas and intestinal material and flora, but rather to provide drainage from the bowel itself until a time when the infection had been overcome and normal peristalsis again established. Therefore, if the fistula did not heal up spontaneously, it was a permanent affair lasting for three to four weeks, that is, until pus drainage ceased and a secondary repair operation could be done.

One objection that can readily be raised against the establishment of a permanent fecal fistula is that a secondary operation may become necessary. In view of the fact, however, that the secondary operation need not be done until the patient has regained his full strength, it can hardly be considered as a valid objection.

Furthermore, it does not always become necessary to close the bowel at the time of the secondary operation, because, if sufficient time elapses, nature often causes a spontaneous closure. In our present group of fifty cases, in twenty-seven of which there were either spontaneous or artificially induced fecal fistulas, seventeen healed spontaneously. In these at the time of the secondary operation it was only necessary to repair the original abdominal incision thoroughly. This is always done in order to prevent any possibility of a future ventral hernia. In only ten cases was it necessary to sew the intestine at the secondary operation. This was easily done when the opening in the bowel was large by a resection of a portion of it, an end to end or a lateral anastomosis being performed. This was necessary, however, in but two out of these ten cases. In the remaining eight we only had to close a small opening in the bowel by subserous sutures.

Out of this total group of fifty cases there were three deaths. Two of these occurred after the primary operation. Both patients had been brought to the hospital in a moribund condition and were operated on immediately, but died soon after the operation. The third patient, a boy of 6, recovered from the primary operation. At this time he had a ruptured purulent appendix, with no walling off whatever and a distribution of pus throughout the entire abdomen. During the night of the third day the patient rapidly developed a distended abdomen, all drainage stopped at once, and the patient became comatose. Our associate, Dr. Stoecks, immediately performed an enterostomy on two bulging loops of the ileum, but death followed soon. These three were the only deaths out of this series of fifty cases of acute appendical peritonitis.

Secondary operations were performed in forty-seven cases. This number includes those that had either a spontaneous or an artificially induced fecal fistula, and those remaining in which the ample drainage proved sufficient to overcome the infection in the peritoneum. In the primary operation of none of these were sutures used except for the deep silkworm sutures that were employed to prevent the abdominal incision from gaping too much. In the secondary operations not a single patient was lost, but all made uneventful recoveries. Most of these still come under our observation from time to time, and in none have any tendencies toward the development of ventral hernia been found.

COMMENT

While an enterostomy should not be done without due and sufficient cause, when the indications are once present, consideration of the annoyance and discomfort of a fecal fistula and the possible dangers of a secondary operation should not weigh heavily in the surgeon's mind. It should not prevent him from making use of this final means of saving the patient's life.

The value of an enterostomy in cases of this type was recognized years ago by the physiologist Heidenhain, who, according to our knowledge, was the first one to advocate the establishment of a fecal fistula as a remedial measure. In later years, Lund[1] of Boston advocated enterostomy as an extreme measure of last resort in selected cases in which the patients are practically moribund from septicemia. It is our contention, however, that the surgeon should never wait until a generalized septicemia from the absorption of intestinal toxins has occurred, but that the curative value of an enterostomy is secured only by performing this operation as early as possible.

Didactic discussions as to whether it is the intestinal obstruction and paralysis or the generalized septicemia resulting from it that kills is of little interest to the patient. What does interest him tremendously is that something be done that will afford him relief. This can be achieved only by removing the toxic intestinal contents. If gastric lavage fails to do this, and if drastic enemas likewise prove impotent, then the only other recourse is to make an artificial opening into the bowel. That a perforation of the bowel is not so dangerous to life as a failure to do this is illustrated in the present group of cases. Out of the entire number of patients that developed or had induced fecal fistulas, there was only one death, or a mortality of 3.7 per cent. We feel confident that this, too, could have been prevented had a fistulous opening been made somewhat earlier in the course.

With the treatment instituted in this group of fifty cases, there were three deaths, a mortality of 6 per

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1. Lund, F. B.: The Value of Enterostomy in Selected Cases of Peritonitis, J. A. M. A. 41:74 (July 11) 1903.

cent. This should be compared with a report of from 30 to 40 per cent. mortality in similar cases as reported by Kelly in 2,000 cases at Mount Sinai Hospital or with nine deaths out of eleven cases, a percentage of 80, seen in consultation by us.

CONCLUSION

In the treatment of this type of appendicitis, it is of paramount importance to establish free drainage in order to encourage the discharge of pus and infective fluids from the abdominal cavity. If this is insufficient, and drainage ceases owing to a dry peritonitis so common in intestinal obstruction and paralysis, then the latter must be relieved by the performance of an enterostomy. It is our conviction that it is not the appendicitis or even the peritonitis, per se, that kills, but rather that it is the toxins which these have caused to accumulate in a gangrenous and paralyzed bowel. Relieve that, and the reward will be the restoration of life and health to the patient in a large percentage of so-called hopeless cases.

INCREASED TOLERANCE AND WITHDRAWAL PHENOMENA IN CHRONIC MORPHINISM

A REVIEW OF THE LITERATURE *

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It is well known that individuals addicted to the use of opium, morphin, codein (Bouma,[1] Pelz[2]) or heroin (Fauntleroy,[3] Wholey[4]) are able to withstand enormous doses of these drugs — many times as large as the lethal dose for individuals unaccustomed to their use. In fact, the average daily oral dose of morphin for an addict is stated to be from 8.22 grains (Brown[5]) to 15.3 grains (McIver and Price[6]), while the daily consumption in certain cases has been reported to be as high as 90 grains (McIver and Price[6]) and 248 grains (Hinckley[7]). It has also been established that, when the administration of these drugs is discontinued in the case of individuals habituated to their use, definite withdrawal symptoms manifest themselves: In general, there is restlessness and a sense of depression in the beginning, followed by yawning, sneezing, lacrimation, coughing, retching and vomiting. Later, there is pain in the abdomen and lower extremities, diarrhea, profuse perspiration, tachycardia, marked asthenia, and irregular pulse, the latter going from extremes of slowness to extremes of rapidity. There may be complete exhaustion and finally collapse, in some cases death.

CAUSES OF INCREASED TOLERANCE

In order to explain the mechanism of the increased tolerance of the system for these drugs and the appearance of the withdrawal phenomena on the discontinuance of their use, a number of investigators have carried out experiments with animals. In general, these researches have shown that tolerance[8] can be induced in such warm-blooded animals as dogs (Faust[9] and others), goats, rabbits, rats and pigeons (Cloetta,[10] Morgenroth[11] and others), whereas cold-blooded animals like the frog become more susceptible (Hausmann[12]). In the case of animals, this tolerance persists for only a few days, while in human beings, it may continue for months (Bishop[13]). The theories evolved by the different investigators in explanation of these findings are both numerous and varied.

In 1883, Marmé[14] conducted a series of experiments with dogs, and concluded, from the results obtained, that morphin was converted in the body into oxydimorphin,[15] a substance having a diametrically opposite physiologic action to that of morphin. He contended that this substance produced the abstinence symptoms which make their appearance on withdrawal of the drug; required increasing amounts of morphin to neutralize its effects; and in turn neutralized the morphin, thus accounting for the increase in tolerance. This theory, however, appears to be untenable in view of the fact that Donath,[16] Stark[17] and Marquis,[18] respectively, operating under similar conditions, could not identify oxydimorphin in either the blood or urine of dogs in which tolerance to morphin had been established. Furthermore, it has been shown that oxydimorphin prepared from morphin with the aid of certain plant juices (Bougault[19]) or by the action of various oxidizing agents in alkaline solution (Schutzenberger,[20] Nadler,[21] Polstorff[22]) does not possess the properties assigned to it by Marmé. Magendie[23] found it to be inactive when administered by mouth to dogs in doses of 0.36 grain, while Kreis[24] observed that it had a very weak morphin-like action. When given intravenously, the latter found that it produced weakness which soon developed into stupor. Toth[25] found

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* For the sake of brevity, the term "morphinism" has been used throughout this review regardless of whether the drug of addiction is opium, morphin, codein or heroin.

[1] Bouma, J.: Ueber Gewöhnungsversuche mit Kodein, Arch. f. exper. Path. u. Pharmakol. **50:** 353-360, 1903.

[2] Pelz: Ein Beitrag zum Codeinismus, Deutsch. med. Wchnschr., **31:** 864-866, 1905.

[3] Fauntleroy, C. M.: A Case of Heroinism, New York M. J. **86:** 930, 1907.

[4] Wholey, C. C.: Morphinism in Some of Its Less Commonly Noted Aspects, J. A. M. A. **58:** 1855-1857 (June 15) 1912.

[5] Brown, L. P.: Enforcement of the Tennessee Antinarcotic Law, Am. J. Pub. Health **5:** 387, 1915.

[6] McIver, Joseph, and Price, G. E.: Drug Addiction: Analysis of One Hundred and Forty-Seven Cases at the Philadelphia General Hospital, J. A. M. A. **66:** 476-480 (Feb. 12) 1916.

[7] Hinckley, L. S.: Narcotic Drug Addiction, Newark, N. J., 1918, p. 26.

[8] Bouma (1903) concluded from his experiments that the ordinary laboratory animals do not acquire a tolerance for codein.

[9] Faust, E. S.: Ueber die Ursachen der Gewöhnung an Morphin, Arch. f. exper. Path. u. Pharmakol. **44:** 217-238, 1900.

[10] Cloetta, M.: Ueber das Verhalten des Morphins im Organismus und die Ursachen der Angewöhnung an dasselbe, Arch. f. exper. Path. u. Pharmakol. **50:** 453-480, 1903.

[11] Morgenroth, J.: Zur Frage des Antimorphinserums, Berl. klin. Wchnschr. **40:** 471, 1903.

[12] Hausmann, W.: Zur Kenntniss der chronischen Morphinvergiftung, Arch. f. exper. Path. u. Pharmakol. **52:** 315-325, 1904; Gewohnung an Morphin und seine Derivate, Ergeb. d. Physiol. **6:** 94-98, 1907.

[13] Bishop, E. S.: Narcotic Addiction: A Systemic Disease Condition, J. A. M. A. **60:** 431-434 (Feb. 8) 1913.

[14] Marmé, W.: Untersuchungen zur acuten und chronischen Morphinvergiftung, Deutsch. med. Wchnschr. **9:** 197-198, 1883.

[15] This compound is also referred to in the literature as oxymorphin, dehydromorphin and pseudomorphin.

[16] Donath, J.: Das Schicksal des Morphins im Organismus, Arch. f. d. ges. Physiol. **38:** 528-548, 1886.

[17] Stark: Untersuchungen über die Gewöhnung des thierischen Organismus an Gifte; Inaug. Diss., Erlangen, 1887; cited by Faust, Arch. f. exper. Path. u. Pharmakol. **44:** 225, 1900.

[18] Marquis, E.: Ueber den Verbleib des Morphins im thierischen Organismus, Pharm. Ztschr. f. Russland **35:** 549-552, 1896.

[19] Bougault, J.: Oxydation de la morphine par le suc de Russula delica, J. de pharm. et de chim. **16:** 49-52, 1902.

[20] Schutzenberger, M. P.: Note sur quelques produits d'oxydation de la morphine sous l'influence de l'acide azoteux, Compt. rend. Acad. d. sc. **46:** 598, 1858.

[21] Nadler, G.: Ueber die Bildung des Oxymorphins bei vorsichtiger Oxydation des Morphins, Schweiz. Wchnschr. f. Pharm. **11:** 417-419, 1873; **12:** 38-42, 1873.

[22] Polstorff, Karl: Die Einwirkung des Kaliumferricyanids und anderer schwacher Oxydationsmittel auf Morfin und "das Oxymorfin Schutzenberger's," Arch. d. Pharm. **217:** 401-424, 1880.

[23] Magendie: Cited by Reil, Materia Medica, Berlin, 1857, p. 257.

[24] Kreis: Cited by Herrmann, Lehrbuch der experimentellen Toxikologie, Berlin, 1874, p. 381.

[25] Toth, L.: Bemerkungen zur Erklärung der chronischen Morphiumintoxikation, Schmidt's Jahrb. **229:** 135, 1891.

it to be inactive when administered by mouth or subcutaneously. He attributed the effects observed by Marmé to emboli, formed, in his opinion, as a result of precipitation which occurred when oxydimorphin was injected into the blood stream. Additional investigations demonstrating the relative inactivity of oxydimorphin and the erroneousness of Marmé's conclusions have been reported by Kobert,[26] Diederich,[27] Puschmann[28] and Gioffredi.[29]

A theory which appears more plausible and which has acquired a certain degree of acceptance was advanced by Faust[9] in 1900. From his investigations, he was led to the conclusion that the system in the case of dogs acquires the power to destroy increasingly large amounts of morphin. He was able to recover from the feces 66 per cent. of the initial dose administered hypodermically. In the feces of the twenty-first to twenty-fourth days of administration, he recovered only 26 per cent.; from the twenty-ninth to the thirty-second days, 8 per cent.; from the thirty-sixth to the fortieth days, 4 per cent., and later, none at all, even though the quantity administered was fifty times as great as that given in the beginning. These dogs, according to his account, showed the same symptoms of chronic morphinism as manifest themselves in man. They showed signs of uneasiness for the drug, became very restless when the time for injection drew near, and one dog is reported as having given every sign of satisfaction when the needle was introduced. As the organs of these animals after death were found to contain only very small quantities of morphin, Faust concluded that tolerance was established solely through the increased power of the organism to destroy (oxidize) morphin.[30]

DESTRUCTION OF MORPHIN IN THE BODY

That morphin is destroyed to some extent in the living organism, there is no apparent reason for doubting. That it is destroyed in increasingly large amounts during the course of tolerance is a contention supported by considerable evidence. Thus, Albanese[31] observed that the livers of tolerant dogs possessed the property of destroying relatively large amounts of morphin in vitro if the animals were deprived of the drug for three or four days preceding death, and that the destructive power was commensurate with the degree of tolerance that had been established. Dorlencourt[32] duplicated these experiments and reported similar results. Cloetta[10] and Babel,[33] respectively, found that morphin was also destroyed in vitro by brain pulp, and to a lesser degree by the tissues of other organs. The experiments of Langer[34] with heroin also have a bearing in this connection. In working with dogs, he found that heroin was excreted principally in the urine, although a small amount also appeared in the feces. During the course of tolerance, he observed that the amount in the urine became less and less, so that finally none could be detected in either the urine or feces.

Even though we accept the foregoing contention, that the organism during the course of tolerance acquires the power to destroy increasingly large amounts of morphin, as an established fact, it does not necessarily follow that this condition is a causative factor in the production of tolerance. It may only be a concomitant phenomenon. In fact, this is the opinion of Cloetta, whose theory in explanation of the mechanism of acquired tolerance was published in 1903.

TOLERANCE OF THE BRAIN FOR MORPHIN

Cloetta appears to have been impressed with the fact that the brain rapidly develops a tolerance for morphin in comparison with the other organs of the body. In search for an explanation of this condition, he conducted a series of experiments in vitro in which he attempted to determine the relative fixing powers of the tissues of the different organs for the alkaloid. The results obtained showed that the brain tissues possessed this power to the greatest degree. He therefore concluded that, while morphin might eventually be destroyed in the organism, its destruction was not the cause for the development of tolerance, but merely a result consequent to its fixation by the tissues. According to his ideas, increased tolerance is to be attributed to an increased power of resistance of the protoplasm to the action of morphin. In the case of the brain, which acquires tolerance comparatively rapidly, it is to be attributed to an increase in power of the lipoids to absorb the drug. In this connection, attention is directed to the fact that Bieberfeld[35] could detect no quantitative changes in the lipoids of the brain of a dog that had acquired a tolerance for ten times the lethal dose of morphin.

DESTRUCTION OF MORPHIN AS CAUSE FOR ESTABLISHMENT OF TOLERANCE

The question of the destruction of morphin in the system as far as its being the sole cause for the establishment of tolerance appears to have been definitely settled by Rübsamen[36] in 1908. In experimenting with rats, he observed that animals of this species which had been immunized to large quantities of the drug, and which could withstand double the lethal dose with impunity, showed at a given moment the presence in their bodies of sufficient morphin to produce toxic effects in animals that had not previously received the drug. He therefore advanced the theory that, in addition to the increased power of the organism to destroy morphin, the cells of the tissues, during the period of increasing tolerance, become less sensitive to the action of the drug. This theory has been accepted in principle and further elaborated by van Egmond[37] and by van Dongen.[38]

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26. Kobert, R.: Lehrbuch der Intoxikationen, Stuttgart **2**: 995, 1906.

27. Diederich, Georg: Ueber Oxydimorphine und seine Wirkungen auf den Organismus, Diss., Göttingen, 1883; cited by Kobert, Lehrbuch der Intoxikationen, **2**: 996, 1906.

28. Puschmann, A.: Ueber Oxydimorphin und seine Wirkung auf den tierischen Organismus; Diss., Göttingen, 1895; cited by Kobert, Lehrbuch der Intoxikationen, **2**: 996, 1906.

29. Gioffredi, Carlo: Recherches ultérieures sur l'immunisation pour la morphine, Arch. ital. de biol. **31**: 398-411, 1899.

30. Faust's results are not conclusive evidence of the destruction of morphin in the system as he did not make quantitative determinations of the amount execreted in the urine throughout the course of his experiments. It is possible that the path of elimination changes during the period of increasing tolerance. In fact, considerable support to this view is given by the observations made by von Kaufmann-Asser (Ueber die Ausscheidung des Morphins im Harn, Biochem. Ztschr. **54**: 161-173, 1913). The latter found that rabbits excreted in the urine from 3 to 23 per cent. of morphin in acute poisoning, and up to 39 per cent. in chronic poisoning.

31. Albanese, Manfredi: Contributo allo studio del comportamento della morfine negli animali alla sua azione: Influenza degli organi interni sul velino, Arch. farma. sper. **8**: 307-315, 1909.

32. Dorlencourt, H.: Etude sur la destruction in vitro du chlorhydrate de morphine par les organes d'animaux accoutumés et non accoutumés, Compt. rend. Soc. de biol. **74**: 895-897, 1913.

33. Babel, A.: Ueber das Verhalten des Morphiums und seiner Derivate im Tierkörper, Arch. f. exper. Path. u. Pharmakol. **52**: 262-270, 1904.

34. Langer, Hans: Ueber Heroinausscheidung und -gewöhnung, Biochem. Ztschr. **45**: 221-238, 1912.

35. Bieberfeld, Johannes: Ueber die Mengenverhältnisse der Hirnlipoide morphingewöhnter Hunde, Biochem. Ztschr. **70**: 158-163, 1915.

36. Rübsamen, W.: Experimentelle Untersuchungen über die Gewöhnung an Morphin, Arch. f. exper. Path. u. Pharmakol. **59**: 227-241, 1908.

37. Van Egmond, A. A. J.: Ueber die Wirkung des Morphins auf das Herz (zugleich ein Beitrag zur Frage der Morphingewöhnung), Arch. f. exper. Path. u. Pharmakol. **65**: 197-213, 1911.

38. Van Dongen, K.: Beiträge zur Frage der Morphingewöhnung, Arch. f. d. ges. Physiol. **162**: 54-66, 1915.

Van Egmond in his experiments (1911) demonstrated that the responsiveness of the vagus center to morphin remains unaltered. In tolerant dogs in which the brain cortex and vomiting center failed to respond to 100 times the initially active dose (0.23 gm. per kilogram of body weight), the vagus center showed the effects of minute doses (0.04 mg. per kilogram of body weight) of morphin as long as several hours after its administration. Van Dongen, in 1915, found that it was possible to accustom the respiratory center to morphin in quantities as large as 1,800 times the initial dose to which the breathing function was responsive, and that the nervous centers governing the dilatation of the pupils were also immunized to the action of the drug in dogs habituated to its use. Other centers did not appear to be so easily affected.[39] The gastric manifestations, for instance, were not so readily dispelled by the development of a general tolerance. Furthermore, the time within which these centers lose their sensitiveness does not correspond with their comparative sensitiveness to the drug before tolerance is established. Van Egmond states that his observations compel him to accept the theory of Rübsamen in preference to that of Faust as more nearly approaching the truth, while van Dongen concludes that we must further postulate a specific tissue immunity in which the different organs and centers acquire immunity with a varied readiness and to an unequal degree.

ANALOGY BETWEEN IMMUNITY BY VACCINES AND THAT OF OPIUM

An explanation of an entirely different character has resulted from the researches of another group of laboratory workers. These investigators have attempted to show an analogy between the immunity produced by bacterial vaccines and that of opium or its alkaloids. As pioneer work along this line should be mentioned that of Gioffredi[40] reported in 1897.

Gioffredi prepared a serum from dogs that had become tolerant to large doses of morphin, and found that, when this serum was injected into kittens, it protected them against the fatal effects of from two to two and one-half times the minimum lethal dose. From this, he concluded that an antitoxic substance ("antimorphin") was formed in the blood of tolerant animals and that this neutralized the effects of the morphin. Results pointing to a similar conclusion were obtained by Hirschlaff,[41] von Marikovszky[42] and by Berri and Belgrano.[43]

In 1902, Hirschlaff reported that he had prepared a serum from rabbits that had acquired a tolerance for relatively large doses of morphin, and that this serum, when injected into mice, protected them against three or four times the minimum lethal dose of the drug.

Von Marikovszky (1907) found that, when from 0.035 to 0.049 grain of morphin detoxicated with progressively diminishing amount of potassium permanganate was administered every three days to rabbits, these animals acquired a high degree of tolerance. A serum prepared from these tolerant animals is stated to have retarded and, in some cases, to have prevented death when injected with or immediately following an otherwise fatal dose of the alkaloid.

Berri and Belgrano (1912) induced tolerance in a somewhat different manner. They injected rabbits repeatedly with an "aggressin-like" centrifugal pleural exudate produced by morphin and aleuronate. A serum prepared from these animals is also reported to have possessed immunizing properties, and probably antiaggressin properties as well.

An opinion favoring a theory of this nature has also been arrived at by Bishop (1913) and others through clinical observations. On the other hand, the animal experiments of Morgenroth (1903), Cloetta (1903) and Mirto[44] (1905) all show concordantly negative results with respect to the demonstration of an antibody in chronic experimental morphin poisoning.

The contradictory character of the results obtained by the foregoing investigators tends to place a negative value on any theory in which it is necessary to assume the direct action of an antibody. Nevertheless, there appear to be good reasons for the belief in some form of serum immunity—perhaps of the second order as described by Ehrlich. For example, Ferrai[45] (1909) demonstrated that morphin differs from most other alkaloids in that it possesses an anticomplementary power. He observed that morphin hydrochlorid, sulphate or acetate hindered hemolysis in the hemolytic system, guinea-pig complement plus rabbit immune amboceptor acting on sheep's blood plus the erythrocytes of sheep's blood.

TOXIN THEORY OF PETTEY

Still another theory differing in character from any of the foregoing has been brought forward by Pettey[46] (1913). As a result of clinical studies, he arrived at the conclusion that the repeated use of opium or its alkaloids gives rise to the formation of toxins (of autogenous and intestinal origin) which act as irritants to the nerve tissues, and that increasingly large amounts of morphin are necessary to counteract the effect produced. This explanation is concurred in by Wholey (1912), who states that he believes increased tolerance, in part at least, is due to the fact that the nerve cells become exhausted from continued reaction and the accumulation of waste products, and for these reasons require an increased dosage to bring about an adequate effect.

WITHDRAWAL PHENOMENA

Important as these theories may be for an understanding of the altered physiologic conditions produced during the course of tolerance, the majority of them offer no explanation for the additional feature that must be taken into account in practice, namely, the abstinence phenomena that manifest themselves when the drug is withdrawn. These symptoms are not merely of a negative nature, but are of the positive kind described in the fore part of this paper.

It will be recalled that Marmé assigned as a cause for the appearance of the abstinence symptoms the physiologic action of oxydimorphin. This substance, he contended, was formed from morphin in the body and required the administration of additional amounts of the latter to counteract the effects that it produced. His theory, however, is held to be untenable for reasons already presented. That, however, these phenomena are due to the formation of some unidentified toxic substance in the body appears to be highly probable in the light of the comparatively recent discoveries of Valenti.[47]

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[39] Langer (1912) observed, in the case of heroin, that the acquired tolerance of dogs to its narcotic action did not extend to its convulsive effects.

[40] Gioffredi, Carlo: L'immunité artificielle par les alcaloides, Arch. ital. de biol. **28**: 402-407, 1897.

[41] Hirschlaff, Leo: Ein Heilserum zur Bekämpfung der Morphinsucht und ähnlicher Intoxikationen, Berl. klin. Wchnschr. **39**: 1149-1152 and 1174-1177, 1902.

[42] Von Marikovszky, Georg: Immunisierungs- und serotherapeutische Versuche dem Morphium gegenüber, Zentralbl. f. Bakteriol. u. Parasitenk. **43**: 494-507, 1907.

[43] Berri, G., and Belgrano, C.: Aggressine rispetto alla cocaina el alla morfina, Ztschr. f. Immunitätsforsch. u. exper. Therap. **5**: Part 2, pp. 1149-1150, 1912.

[44] Mirto, Domenico: Sul significato della siero-reazione precipitante nell' assuefazione alla morfina e sul valore come mezzo di reconoscimento della morfina, Arch. farma, sper. **4**: 406-418, 1905.

[45] Ferrai, Carlo: Sul potere anticomplementare della morfina. Pathologica **9**: 505-511, 1909.

[46] Pettey, G. E.: The Narcotic Drug Diseases and Allied Ailments, Philadelphia, 1913, p. 13.

In 1914, Valenti found that, when the administration of morphin was stopped in the case of dogs after a period of developing immunity, marked circulatory disturbances made their appearance. These consisted of increased frequency of the pulse, severe arrhythmias, and arterial hypotension. These promptly disappeared if morphin was again administered in quantities sufficient to produce the so-called morphin pulse. When the serum of these dogs, taken during the abstinence period, was injected into normal animals of the same species, the foregoing syndrome was promptly produced. This was demonstrated not to be due to the toxic properties of the serum as such, since no evil effects were observed when the serum from unmorphinized dogs was employed.

While the identity of this toxic substance has not been established to date, it is not in keeping with our present theories of immunity to pronounce it an antitoxin. In no disease in which antitoxin formation has been demonstrated have there been observed untoward symptoms that could be attributed to the action of the antitoxin. Although aware of these facts, Bishop still persists in the opinion that this substance is an antibody which also possesses toxic properties. His theory in explanation of increased tolerance and the appearance of the withdrawal phenomena is based on this belief and is supported by logical deductions made from a clinical study of numerous so-called addicts.

A theory also based on the assumption that toxins are responsible for the symptoms produced was brought forward by Pettey in 1913. He contends that the withdrawal phenomena are the result of the saturation of the system with toxins of intestinal and autogenous origin. So long as the drug is taken in the required amount at regular intervals, the nerve centers are kept benumbed so that they do not respond to the irritating action of the accumulated toxins; but when administration is discontinued, the characteristic symptoms immediately manifest themselves.

An explanation somewhat similar in type was advanced by Kunkel[48] in 1901. He assumed that the cells of the various organs were spurred to greater efforts under the continuous effects of repeated doses of morphin, and that when the depressing action of the drug was removed through the discontinuance of its use, a hypernormal activity resulted. In his opinion, the withdrawal symptoms are merely the outward manifestations of this increase in activity.

CONCLUSION

From the foregoing review of the literature, it becomes apparent that, up to the present time, all investigators have failed to demonstrate the exact nature of the factors that enable the system, in the case of either animals or human beings, to tolerate enormous doses of these drugs or to identify the substances that give rise to the withdrawal phenomena. The only knowledge of a positive nature that we really have at present concerning these problems is that the different organs and centers of the body acquire tolerance to morphin and heroin to a different degree and with varied degrees of readiness; that these drugs as such are excreted in the feces in diminishing amounts during the period of acquiring tolerance; and that there is evidently present in the blood serum of tolerant animals (dogs) during periods of abstinence a substance or substances which, when injected into normal animals of the same species, causes the appearance of symptoms identical with the so-called withdrawal phenomena. Whether or not the disappearance of these drugs from the feces is due to their increased destruction in the organism is still an unsettled question. Attempts to solve this problem through a chemical examination of the excretions have led only to confusion, the literature being replete with contradictory results. Furthermore, it has not been proved that the destruction of morphin in the organism, if it does take place to an increased degree, is a causative factor in the production of tolerance. As stated before, it may be only a concomitant phenomenon.

TORSION OF AN ENLARGED HYDATID OF MORGAGNI

AS THE CAUSE OF ACUTE ABDOMINAL DISTURBANCE *

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OMAHA

The occurrence of a small cyst with a stringlike pedicle, having its attachment to the lower margin of the fimbriated extremity of the fallopian tube, is frequently observed. These are generally considered as derived from some persistent remnant of the wolffian body or its duct, and their presence has little pathologic or other significance.

As a perusal of the available literature has been most unfruitful in bringing to light evidence of their possible pathologic importance, an instance that recently came under my observation may be of interest in showing that a cyst of this character, by virtue of its long, attenuated pedicle, may be subjected to torsion and give rise to acute abdominal disturbance of unusual severity.

REPORT OF CASE

History.—Miss E., aged 18, domestic, who first consulted me, Feb. 5, 1918, on the preceding day had been rather abruptly seized with cramping pains in the lower abdomen especially on the left side. Accompanying the pain there was unusually severe and repeated vomiting and extreme prostration.

Examination.—The temperature was 101, the pulse, 130. The abdomen was rounded, moderately tympanitic with tenderness on pressure, most marked in the left hypogastric region. There were spasm and *moderate rigidity* of the rectus on this side. Rectal examination was negative, except that tenderness was elicited high up on the left side. A leukocytosis of 16,800 with a polymorphonuclear percentage of 86 was found. *Urinalysis was negative.*

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[47] Valenti, Adriano: Experimentelle Untersuchungen über den chronischen Morphinismus; Kreislaufstörungen hervorgerufen durch das Serum morphinistischer Tiere in der Abstinenzperiode, Arch. f. exper. Path. u. Pharmakol. **75**: 437-462, 1914.

[48] Kunkel, A. J.: Handbuch der Toxikologie, Jena **1**, Part 2, pp. 815-826, 1901.

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Diagnosis.—The past history did not furnish much enlightenment and was rather confusing. The patient had never been rugged since puberty, and menstruation had always been extremely painful and profuse. During the preceding nine months the interval had been reduced from four to three weeks, and the dysmenorrhea exaggerated. The onset of the irregularity followed an attack similar to the present one, and was definitely caused by falling heavily when attempting to jump over a ditch. Since then, at intervals of two or three months, similar though milder attacks had occurred, lasting only a few days.

She denied the possibility of venereal infection, and this assertion was substantiated by the presence of an intact hymen. In view of the pronounced gastric manifestations, the fever and rapidity of the pulse, together with the fairly well localized pain and associated muscular spasm and rigidity, the possibility of involvement of a left sided appendix was entertained.

Torsion, rupture or hemorrhage from or into an ovarian cyst were also considered as possible diagnoses.

Course.—As the diagnosis was in doubt, the rather hazardous course of temporization under close observation was decided on. During the following five days the temperature ranged from 99 to 100, while the pulse rate remained rather consistently around 100. Some nausea persisted, as did an area of localized tenderness of some intensity in the left hypogastrium. As there was no appreciable improvement in the symptoms, operation was decided on.

Operation and Result.—February 11, a median laparatomy incision was made below the umbilicus. A small amount of blood-tinged serous fluid was found in the pelvis. At the outer extremity of the left tube a large hydatid of Morgagni was discovered which approximated, in size and shape, a large olive. It was purplish black and had a pedicle 1½ inches long. A twist of one complete turn was noted in this when the structure was elevated, but it may be assumed that a greater degree of torsion may have existed and that partial unwinding had occurred spontaneously or as a result of exploratory manipulation in the pelvis. The cyst was quite tense, and over its surface were numerous engorged veins. The pedicle was ligated and the cyst removed. Both ovaries were found enlarged, owing to numerous atretic follicles. Both ovaries were partially resected, and an appendix, in the usual situation and otherwise normal, was removed. The abdominal cavity was carefully explored and no other pathologic condition found. The operation was completed with a dilatation of the cervix. Convalescence was uneventful. Subsequent menses have been regular and practically without discomfort. The patient's general health improved markedly, and she gained 10 pounds in five weeks. The cyst was oval, dark purple, and measured 2.5 by 2 cm. The remnant of its pedicle was 2.5 cm. long.

CONCLUSION

I simply wish to add torsion of the pedicle of an enlarged hydatid of Morgagni, which is an otherwise harmless structure, to the list of unusual causes of acute abdominal disturbance occurring in the female.

Feeblemindedness.—The report of the Kansas Commission on Provision for the Feebleminded, dated Jan. 1, 1919, says that, based on the lowest conservative estimate, there are 7,500 feebleminded persons in Kansas, and less than one tenth of them are cared for at the institution at Winfield. It is also estimated that there are at least 1,500 feebleminded children in the public schools of the state, where they are not receiving the type of training that will fit them to be partly self-supporting. It is recommended that the way to stop the increase of the feebleminded is to transfer them to the custodial care of the state before they reach the age of adolescence, and also to place the feebleminded men and women of the state in colonies especially provided for their care. The report contains discussions of various aspects of the problem of the feebleminded, and offers a program for handling it.

Clinical Notes, Suggestions, and New Instruments

REPORT OF AN UNUSUAL CASE OF BACTEREMIA

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A. J. L., aged 18, who had a neurotic temperament, reported, Sept. 14, 1918, complaining of vertigo when up and about. The previous personal and family history was negative. Examination disclosed a slightly enlarged spleen and prolonged expiration over a small area under the right clavicle. The temperature was 104 F., the pulse 108, and the white blood count 23,000. There were 85 per cent. polymorphonuclears. No plasmodia were found in the blood, and the blood culture was sterile.

During the first two weeks the temperature ran a very irregular course, ranging from 97 to 104 F., without sweats. Typhoid fever, malaria and tuberculosis were eliminated, as the possible underlying conditions by appropriate clinical and laboratory findings. Two blood cultures made during this period produced no growth.

A blood culture, September 29, produced a gram-negative diplococcus, which was plated on eosin brilliant green, blood agar, nutrient agar and litmus lactose agar. No growth developed on any of these mediums except the blood agar, which produced an abundant growth of pure gram-negative diplococci. These organisms varied in size, shape and staining characteristics. Fifty c.c. of antimeningococcic serum were administered intravenously at this time.

TITRATION AGAINST DILUTED SERUMS

	Dilutions			
	1:50	1:100	1:200	1:400
Patient's blood	+++	+++	++	+
Rockefeller polyvalent	++	++	+	—
Rockefeller regular type	+	—	—	—
Rockefeller para type	++	++	+	+

By the Krumwiede method of slide agglutination, a pronounced clumping occurred with the Rockefeller polyvalent serum. This clumping occurred in gradually diminishing intensity as the culture was attenuated by subculturing.

Subcultures were made on plates with these results: nutrient agar, —; serum glucose, + (with slight acidification); serum maltose agar, +; serum levulose agar, —; blood agar, +. There was no growth on plates of various mediums left at ordinary room temperature. Andrade's indicator was used for determining acidification in the serum agar tubes.

An emulsion of the growth from the serum agar was standardized at about 5 billion to the cubic centimeter. This was titrated against diluted serums as shown in the accompanying table.

October 2, the patient developed an exaggerated knee jerk, and ankle and patellar clonus. Kernig and Babinski reactions were absent. The temperature was 103 F., the pulse 136, and the respiration 19. Twenty c.c. of spinal fluid were withdrawn and 30 c.c. of antimeningococcic serum were injected into the spinal canal. The fluid withdrawn was sterile, the cell count was 20 per cubic centimeter, and the globulin test was negative. For two days the condition of the patient was much improved.

During the next ten days about 300 c.c. of various makes of antimeningococcic serum were given into the veins, muscles and spinal canal, none of which produced the slightest benefit. The temperature ranged from 97 to 103.4 F., and the pulse remained above 110.

October 16, a blood culture was sterile, and 0.3 c.c. of an autogenous vaccine, containing about 1 billion organisms to the cubic centimeter, was given intramuscularly. This was followed by a slight reaction and reduction of the temperature. The vaccine was repeated at forty-eight hour intervals, the dosage being rapidly increased up to 1.25 c.c. This was reduced to 1 c.c. and was continued up to November 4. The temperature remained normal after October 31. There was a remarkable absence of subjective symptoms throughout the course of the disease. Vertigo was the only symptom complained of and it was with difficulty that the patient was kept in bed.

Convalescence was uneventful and rapid, though the pulse remained above normal up to the last of December.

SUMMARY

The interesting features of the case are: (1) The absence of subjective symptoms; (2) the presence in the blood stream of an organism of this type without production of more pronounced meningeal symptoms; (3) the slight reaction of the organism on the carbohydrates, its irregular agglutination reactions, and the absence of its specific antibody in all of the serums employed, and (4) the prompt reaction of the patient to the autogenous vaccine.

The conclusion reached by us and concurred in by Dr. K. F. Meyer of the Hooper Foundation, San Francisco, was that the infecting organism was a parameningococcus.

COLORIMETRIC STANDARDIZATION OF THE CELL SUSPENSION IN THE WASSERMANN REACTION

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Of the five factors entering into a complement fixation reaction, such as the Wassermann, one of the most important to standardize is the amount of cells to be hemolyzed. On this quantity, the erythrocytic mass, is based the amount of hemolytic amboceptor to be used, and from these the quantity of complement is derived by titration. The preliminary titration of the amboceptor-complement balance required for hemolysis determines the quantity of complement which may be fixed by an antibody contained in the serum used in the main test. Variations, therefore, in the quantity of cells to be hemolyzed directly affect the diagnostic value of the fixation reaction.

This is not true of a "loose system" when only strong positives are sought, in which many units of both complement and of amboceptor prevent the possibility of fixation from anything less than an overwhelming amount of antibody. In such tests delicacy in the preliminary titrations can be greatly diminished.

At present there is a source of confusion in that many laboratories are using as controls, or even substituting for the Wassermann reaction, various modifications of the test which are not only more sensitive to complement fixing bodies but also do not use the same proportions of the different factors, and in using different factors give results not wholly comparable to the Wassermann, the basis of diagnosis being altered. It is time that efforts were directed toward standardizing the reaction or such elements of it as can be standardized, for one reason, in order to allow definite comparison of the ever multiplying modifications.

The hemolytic system used, whether sheep, ox, human or chicken, is important only as it affects amboceptor, for the amount of cells and of complement is readily made the same for different workers. An amboceptor of less than 1:1,000 titer is in danger of giving complement fixation from agglutinin reactions, and an erythrocyte to be usable must not only be accessible when wanted but capable of producing a high titer hemolytic amboceptor in an available animal. The use of cell suspensions of 1, 2.5, 3.5 or 10 per cent. in different technics makes ultimately for a different standard of antibody content in the serum to be tested for the diagnostic amount of fixation, unless the amount of cell suspension used gives the same proportion of cells to the whole volume of the main test. The original standard of one-fifth volume of 5 per cent. cells makes 1 per cent. cells in the total volume, and should be adhered to.

The cell suspension is usually estimated from the quantity of sediment in the centrifuge tube after the last washing. This procedure is not the best for several reasons: The arm length of the centrifuge, its speed and the time of centrifugation should all be accurately measured. Inaccuracies in the lower graduations of the centrifuge tube are common. The reading of the mass of sediment is a question of judgment unless it happens level with a marking. Sometimes even after repeated washings there is a little sediment adherent to the tube. The saline solutions in different laboratories vary between 0.8 and 0.9 per cent. Altogether there are too many details to be left to the average technician.

In the Sahli hemoglobinometer is furnished a method for obtaining a cell suspension everywhere of the same strength. The instrument is in every laboratory, readings are quickly made, and the percentage of error is far less than in the estimation from sediment. The complement will be found to titrate more evenly. Of a 5 per cent. suspension of sheep cells properly centrifugated, 0.2 c.c. will give a reading of 75 in the Sahli hemoglobinometer. With this method the suspension need not be wholly thrown down after the last washing (4-5); a reading can be made with the hemoglobinometer, and the final dilution may be estimated and made quickly and accurately, and in all laboratories of the same strength.

COINCIDENTAL ACUTE PERFORATION OF A DUODENAL ULCER, AND BLOCKING OF THE CYSTIC DUCT BY STONE, WITH ACUTE CHOLECYSTITIS

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An acute free perforation of a duodenal ulcer presents a picture that should seldom confuse it with the more common of the abdominal lesions. The sudden and usually terrific onslaught of pain which drops the patient as though shot, the bilateral boardlike rigidity, and the complete physical collapse that accompany the accident, usually serve clearly to define its nature.

Obviously, the chief concern of the surgeon in the case of the acute abdomen is to decide the necessity for surgical intervention. This done, a differential diagnosis should, if possible, be made. In the case I wish to report, the interest centers about two interesting conditions: First, there were two coincidental acute lesions, both in the upper abdomen; second, the clinical picture suggested neither of the two lesions.

REPORT OF CASE

History.—Mrs. P., aged 29, who entered Wesley Memorial Hospital, September 21, 1918, referred by Dr. J. G. Campbell, began first to feel sick shortly after noon, September 19. Previous to this time she felt "perfectly well." As the afternoon progressed, the vague feeling of illness defined itself as a diffuse abdominal discomfort which progressed in severity, keeping her awake until midnight, after which she slept at intervals.

On the following morning, feeling somewhat relieved, she was able to be about. Late in the afternoon a rapid increase in the severity of the pain compelled her to go to bed. Attempting to eat supper, she vomited for the first time since the onset of symptoms, thirty hours previous. During the night, the pain shifted to the right side, and became so severe that at 4 a. m. her physician was called in. A possible history of previous abdominal disturbances was minutely investigated, and proved negative.

Examination.—The patient was first seen by me forty-eight hours after the onset of symptoms. Her general condition was good. There was no evidence of shock. She was suffering what evidently was an easily endurable abdominal pain. There was marked rigidity over the entire right rectus; the appendical area was very tender. There was moderate tenderness over the gallbladder region and in the midline just below the ensiform. The left rectus was moderately rigid. At this time the leukocyte count was 16,000; polymorphonuclears, 88 per cent. The temperature was 100; the pulse was 100.

The onset and manner of development of the symptoms suggested an acute appendicitis of approximately forty-eight hours' duration, that during the past twelve hours was giving rise to a diffuse spreading peritonitis. A laparotomy was immediately performed.

Operation.—A muscle-splitting incision revealed a large quantity of mucopurulent exudate, a marked peritonitis, and an appendix very evidently not the source of the trouble. The tip of a tensely distended gallbladder was palpable just above the upper end of the incision, which was promptly closed and an upper rectus incision made. This revealed a gallbladder 7 inches long, tensely distended, and covered by a thick, fibrinous exudate. There was neither perforation nor gangrene present. This also seemed unlikely as the cause of so widespread a peritonitis, and so the stomach was explored. There was found a punctate perforation of an old callous ulcer, just distal to the pylorus. Mucus was poring from the perforation.

The perforation was closed by infolding first with catgut and then with silk. A posterior gastrojejunostomy was performed, and following this, a cholecystectomy.

Section of the gallbladder revealed a single calcium stone, one-half inch in diameter, in the entrance to the cystic duct, which was completely blocked by inflammatory edema. The gallbladder was filled with a thick, tarry bile, and its walls showed a chronic fibrous thickening, on which was superimposed the acute process, brought on, doubtless by movement of the stone.

Postoperative Course.—The abdomen was closed without any drainage whatsoever. The postoperative temperature ranged from 99 to 101 the first two days, and went to 102.4 on the third day; from the fourth day on it remained normal. The patient left the hospital on the fourteenth day, eating and enjoying solid food. There was no wound infection.

COMMENT

In passing, I wish briefly to comment on the treatment used. In the presence of a general peritonitis, and following a cholecystectomy, the abdomen was closed without drainage.

For the past four years at Richter's Clinic at Wesley Memorial Hospital, we have drained no abdomen following cholecystectomy when exploration of the common duct was not made. Cases of empyema and gangrene are excepted. We feel that the peritoneum is able amply to take care of the slight soiling that the stump may cause. So far, our practice has fully been justified. This I consider one of the important recent advances in the technic of gallbladder surgery.

Lastly, it is of paramount importance to differentiate the peritonitis that follows a duodenal perforation and that which follows a virulent bacterial invasion from a lower portion of the intestinal tract. The contents of the duodenum are practically sterile. The widespread peritonitis that follows free perforation is due to the acidity of these contents, and is a chemical peritonitis. The ulcer once closed, excepting in those cases already exhausted from prolonged toxic absorption, the peritoneum will take care of the remainder of the exudate. Foreign material introduced for the purpose of drainage introduces infection, and by contact with the site of recent perforation often causes a fistulous opening. Drainage following duodenal perforation is undoubtedly one of the important causes of the high mortality rate.

A SIMPLE METHOD FOR THE DEFIBRINATION OF BLOOD

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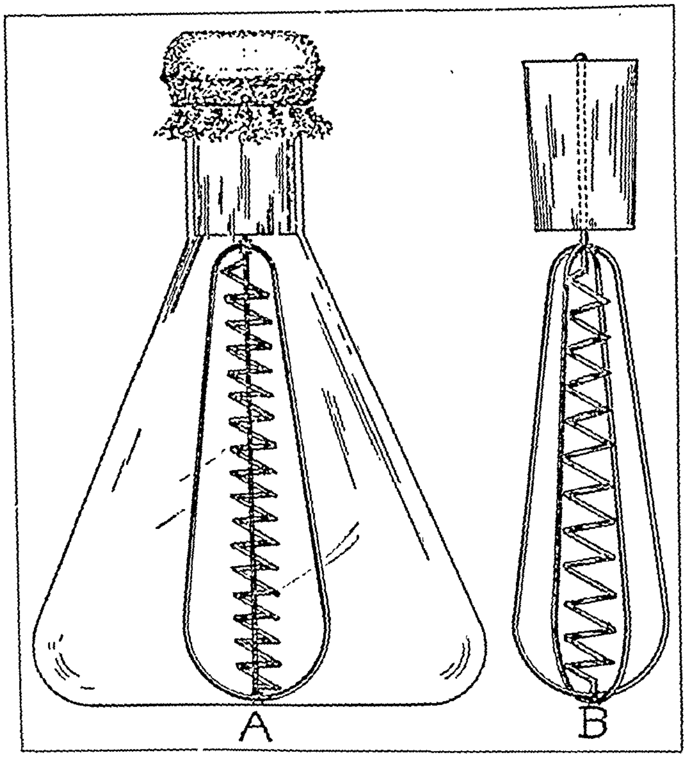
Second Lieutenant, V. C., U. S. Army

The great demand, the frequent loss, and the inability to readily procure suitable beads for the defibrination of blood has prompted the designing of this simple apparatus, which has given excellent results, and which may be of interest and value to those engaged in the class of work necessitating such treatment of blood.

The apparatus consists of an ordinary Erlenmeyer flask (*A*) with a cork to fit, and a piece of looped wire, preferably copper, as copper will not rust and is readily cleaned.

The wire (*B*) may be bent into simple loops or, as set forth in the drawing, may be arranged as an elongated spiral with the two outer loops connected therewith at the top and bottom, the spiral being in the center. This tends to impart more or less rigidity to the structure and, the wire being flexible, is easily introduced into the flask. The upper process of wire extends through the cork and is fastened on the upper side.



Apparatus for defibrination of blood: *A*, Erlenmeyer flask, cork and wire complete; *B*, cork and wire.

When it is desired to procure blood aseptically, the stopper may have a glass tube introduced between the center and edge, and a plug to fit.

When the desired quantity of blood is procured, the flask is grasped by the neck, the stopper toward the palm of the hand, and defibrination accomplished by a vigorous motion not unlike ringing a bell.

After sufficient shaking, the wire is removed by withdrawing the stopper, and the fibrin will be found closely adhered to the mesh, leaving the defirinated blood within the flask.

1608 Q Street N.W.

Sickness in Relation to Family Income.—Sydenstricker, Wheeler and Goldberger of the Public Health Service made an investigation into disabling sickness among the population of seven cotton mill villages of South Carolina in relation to family income during May and June, 1916. The study covered 747 households composed of 4,161 persons. They conclude (*Public Health Reports,* Nov. 22, 1918): A higher sickness (involving inability to work) rate and a greater amount of working time lost on account of such sickness were found among members of families whose incomes were low than among members of families with a more favorable economic status. Only when a family income approximated $10 per half month per adult male unit (or about $900 a year for a family of "normal" size in 1916) did the sickness rate appear to be as low as that suggested by similar censuses in a number of localities in the United States as the normal rate. Low economic status appeared to be a more striking concomitant of high sickness rate among females than employment in mill work. A greater proportion of disabling illness, of relatively long duration, appeared among persons whose family income was below the average than among persons with a more favorable economic status. In the analysis of morbidity facts economic status should be given proper emphasis.

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SATURDAY, APRIL 12, 1919

"THE NEEDS OF MEDICAL EDUCATION AS REVEALED BY THE WAR"

When the United States entered the great war, the Medical Corps of the Army consisted of less than 450 regular medical officers. When the armistice was signed this body had expanded to more than 32,000 officers; practically all of the increase represented volunteers from the medical profession in civilian life. The views of one of the regular medical officers regarding the great body of civilian physicians with which he came in contact on their entrance into military service appear in this issue.[1] General Munson gives his estimate of the professional qualifications of the medical men from civilian life, as seen and studied in the medical officers' training camps. He indicates that the civilian physicians entering the Army were a selected group and therefore their qualifications averaged higher than the general average of civilian physicians.

Along with General Munson's paper we are also publishing a letter[2] and a reply bearing on the same subject. In his letter Dr. Vaughan asks General Munson for an estimate of the professional qualifications of the Reserve Corps men who entered the service without passing through the medical officers' training camps. Unfortunately, the reply does not contain the information. Altogether, the number of these must have been large. For example, there were (*a*) nearly 1,000 recently graduated men, who represent the latest productions of the best medical schools, and who were sent to the British army during the summer of 1917; (*b*) the personnel of the Red Cross hospitals, who either in the early summer of 1917 or later, went directly to France; (*c*) the large number of casual medical officers who went directly overseas in 1917 or later; (*d*) the large number of reserve officers in various base hospital units in this country, some of which were later sent to France while others remained in the United States, and (*e*) the medical officers in the National Guard divisions.

In his reply, General Munson does, however, make two statements which appear to be fundamental, namely: (*a*) "The general qualifications of the great majority of the medical men entering the services were good," and (*b*) "the examinations [referred to in General Munson's paper] were conducted . . . on a wholly insignificant number of new officers."

These statements should be carefully considered by the reader in connection with General Munson's article, since they are important to any one who attempts to judge the best product of our best medical schools with their modern equipment and methods of instruction. All medical educators will agree with General Munson that perfection in medical teaching has not been reached. Nevertheless all must agree that admission to our better medical schools is now effectively safeguarded; thus preventing at the source the entrance of uneducated men. As a result of the campaign conducted by the American Medical Association, during the last fifteen years, through its Council on Medical Education, aided by the leading medical educators in this country, the requirements for admission to the medical schools of the United States have been greatly advanced, and medical education has been greatly improved in other respects.

General Munson suggests that the Army psychologic tests be applied to those seeking admission to medical schools, and states that these tests are now "employed in the hiring of artisans, clerks, etc." Even though medical officers fell below others in these alleged reliable tests of mental alertness, the training and methods of thought of physicians tend to carefully considered judgment rather than to the quickness of eye or finger that is demanded of the typesetter or artisan. It must be borne in mind that students are not now admitted to our better medical schools unless they have had a preliminary training equivalent to the training received in the first two years of a college course. They are hardly to be compared with artisans and clerks. There is *no question* as to the intelligence of these students when they enter the medical schools. There are, however, other essentials besides intelligence for those who would make a success in the practice of medicine and be an honor to the profession. The second essential is industry, and this can be tested out *only* under at least one semester of strenuous trial. Even then there is no method known by which it can be determined to what extent industry on the part of the individual will be employed in subsequent life. The third essential to an honorable position in the practice of medicine is integrity. This qualification can be determined only after close association extending through a comparatively long period.

There are men in all grades of life and in all professions who will not be industrious except when under immediate stimulation and direction. Failure to continue the industrious pursuit of scientific medicine is the cause of the greater number of lapses of those who during the past ten years have gone out from our medical schools. With this in view, the recommendation made by General Munson in his letter that physicians be encouraged to keep up with medical progress is of the greatest importance and deserves consideration from all who are concerned in medical education.

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[1] Munson, E. L.: The Needs of Medical Education as Revealed by the War, this issue, p. 1050.

[2] Needs of Medical Education as Revealed by the War, Correspondence, this issue, p. 1095.

No apology is needed concerning the actual work and results achieved by these volunteer medical officers. They kept the medical quota more than filled without being materially stimulated by the draft. General Crowder has testified not only to the civilian physician's patriotism but also to his efficiency on the more than four thousand draft boards, and he also has disposed of the myths about men with glass eyes and cork legs being accepted for the service by medical men.

Nearly 35,000 physicians donned the khaki and blue of the Army and Navy. We venture the statement, although we have no exact figures on this point, that the volunteer medical officers rendered at least 95 per cent. of the medical service received by our soldiers in hospitals, in camps and in the field, both in this country and in France. We say these things, not boastfully, but truthfully. The medical profession did its full duty—and did it well.

GREEN FOODS AND VITAMINS

The importance of those as yet little understood food factors popularly termed vitamins has become well established in the minds of persons who discuss dietetics from a scientific standpoint. Owing to the historical development, we presume, of our knowledge of the subject, milk and its products have heretofore furnished the chief topic of discussion in relation to vitamins. Thus it is now understood that the secretion of the mammary gland includes, in addition to such excellent nutrients as proteins, fats, sugar, salts of lime and other elements, constituents that promote nutrition and growth and, if properly conserved, suffice to avert scurvy in those individuals that depend on milk as the sole or preponderating source of their nourishment. Dietary analysis, as it is now practiced through actual feeding trials by investigators of nutrition, has assumed the existence of several types of vitamins in milk: the water-soluble, the fat-soluble, and the antiscorbutic vitamins, if they may provisionally be so designated. The lack of any of these "properties" or "potencies" in a dietary during a long period is likely to lead to characteristic pathologic conditions—deficiency diseases, as they have lately been designated. Scurvy, beriberi and pellagra have already been interpreted from this etiologic standpoint.

Fortunately, the vitamins are by no means confined in their occurrence to milk and eggs. They are found widely distributed in different types of food products from animal and vegetable sources, as has been pointed out from time to time in these columns.[1] The demonstration of the existence of antineuritic vitamin in certain parts of the widely used cereals, and the loss of this essential constituent as the result of high milling, have attracted attention to the significance of methods of manipulation in the preparation of foods for human consumption.[2] It has, for example, furnished part of the problem for debate in relation to the relative value of bread made from whole wheat flour or old-fashioned corn meal, in contrast with the modern "white" bread and "highly milled" corn foods.

Although green vegetables have long been popular in the dietary in every part of the world where they are available, the real significance of their inclusion and the almost universal desire for them has been difficult to explain on the basis of the limited conceptions of food values that prevailed a generation ago. Only a few of the vegetables and fruits are especially valuable as "food fuel" or as sources of protein; hence their popularity has primarily been attributed to mineral constituents, the indigestible "roughage" that they afford, and to desired flavor. Latterly, however, a new rôle has been given to many of the vegetables as "protective" foods because of the demonstration that, like milk, they are carriers of indispensable vitamins. Carrots, cabbage, spinach, tomatoes, etc., are thus brought into a new prominence. What is evidently needed in the immediate future for the development of rational dietetics is a widespread survey of the occurrence and distribution of the vitamins in all types of food products that enter into use in the nutrition of both man and the domestic animals on which he is so largely dependent. It is precisely through such laborious studies, in which American physiologists have been conspicuous pioneers, that the danger of identifying certain butter substitutes with butter has been averted and that the necessity of thinking of foods in terms other than calories alone has been emphasized.

What is involved in this newer knowledge may be illustrated by a recent statement of Osborne and Mendel[3] in connection with their studies of vitamins in green leaves. They aver that far less dried spinach supplies sufficient water-soluble vitamin to promote normal growth than do whole wheat, soy beans, dried egg, meat, milk or potatoes. Spinach leaves are much richer in the fat-soluble vitamin than are most of the products used in our ordinary rations. So far as the limited data now available permit deductions of a general nature, it seems, according to Osborne and Mendel,[4] that the green vegetables supply an important addition to the diet of man because the staples, such as cereals, meats, potatoes, fats and sugar, probably furnish too small an amount of either of these vitamins to meet fully the requirements of an adequate dietary. Therefore care should be taken not to reduce greatly the quantity of green vegetables customarily eaten until more is learned about the actual requirements for these food factors and their relative abundance in the commonly used vegetables and green foods. Only then will it be safe to apply the results obtained in the laboratory to attempts to effect economies in the use of these relatively expensive food products. It may be quite possible for a person to omit fruits and vegetables from his diet without running the risk of obtaining enough starch, sugar and protein. But there is in fruits and vegetables an apparent safeguard to health. Their use has long been fostered by dietary tradition and personal preference; and now it is further justified by the discoveries of science.

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[1] Flavors and Vitamins, Current Comment, J. A. M. A. **63:** 2296 (Dec. 26) 1914; Modern Bread and Deficiency Diseases, ibid. **66:** 1314 (April 22) 1916; What Is a Vitamin? editorial, ibid. **76:** 1470 (May 6) 1916; Dietary Toxicity versus Deficiency, ibid. **67:** 1094 (Oct. 7) 1916; The Resistance of Antineuritic Vitamins to Alkalis and Heat, ibid. **71:** 41 (July 6) 1918; New Observations on Vitamins, ibid. **71:** 566 (Aug. 17) 1918; More Milk for Vitamins, ibid. **71:** 1582 (Nov. 9) 1918; Vitamins and Metabolism, ibid. **71:** 1662 (Nov. 16) 1918.

[2] Voegtlin, C.; Lake, G. C., and Myers, C. N.: The Dietary Deficiency of Cereal Foods with Reference to Their Content in "Antineuritic Vitamins," Pub. Health Rep. **33:** 647, 1918. Voegtlin, C., and Myers, C. N.: The Growth-Promoting Properties of Foods Derived from Corn and Wheat, ibid., p. 843; Phosphorus as an Indicator of the "Vitamin" Content of Corn and Wheat Products, ibid., p. 911.

[3] Osborne, T. B., and Mendel, L. B.: Vitamins in Green Leaves, Proc. Soc. Exper. Biol. and Med. **16:** 15, 1918.

THE SYNTHESIS OF HIPPURIC ACID IN THE BODY

In clinical discussions on the composition of the urine, one rarely finds any mention of hippuric acid. Presumably this is due to the fact that even marked variations in the content of this compound are not provocative of pathologic manifestations, as are excretory products like uric acid phosphates or oxalates. Furthermore, no abnormalities of nutrition have been associated directly with exceptional appearances of hippuric acid. Nevertheless, this substance represents the result of a highly important protective reaction on the part of the organism, namely, the conjugation of ingested benzoic acid with glycocoll supplied by the organism to detoxicate an otherwise harmful substance. Even with an ordinary mixed diet that includes fruits and vegetables, as much as 1 gm. of hippuric acid a day may be eliminated in the urine.

It is surely not without interest, therefore, to know the details of the origin of an excretory substance like this, which plays an important part in preventing harm from the damaging products to which the organism is continually exposed. As the result of the classic studies of Bunge and Schmiedeberg in Strassburg, the kidney has been regarded as the sole seat of hippuric acid synthesis. The reaction held a unique position for the reason that almost every other product appearing in the urine is brought ready-made to the kidney for elimination. The original experiments were conducted on carnivora. Subsequently it was maintained by Friedmann and Tachau[1] of Berlin that the synthesis in herbivora (rabbits) occurs not only in different organs but also in a different manner than in the carnivora, with which group man has been classed in respect to this problem.

Some time ago we pointed out that, according to observations of Kingsbury and Bell[2] in this country, in carnivora the liver also may take part in the hippuric acid synthesis. They found a relatively large amount of hippuric acid in the liver of a nephrectomized dog after injection of glycocoll and sodium benzoate. At the Michael Reese Hospital in Chicago, Lackner, Levinson and Morse[3] have investigated the problem in a different way in carnivora. They compared the urinary output of hippuric acid in dogs on diets of constant composition before and after poisoning with hydrazin, a substance that causes profound liver involvement while the kidney cells are left intact.[4] There was a reduction in the output of hippuric acid as soon as the liver became seriously involved. The conclusion seems justified, therefore, that the liver participates in the usual synthesis. This is, as the Chicago investigators remark, well in keeping with what is known of the hepatic in contrast with the renal functions. Other protective conjugations, such as those of the sulphates and the glycuronates, are undoubtedly referable to the liver, if not to other organs. The production of hippuric acid apparently forms no exception to this.

Current Comment

DOES THE HEART RESPOND TO FATIGUE?

The phenomena of fatigue in skeletal muscles have been the subject of numerous experimental investigations. They have clearly demonstrated that a decrease in irritability or responsiveness to stimuli is one of the characteristics that develop. Fatigue products, so-called, seem to be produced or liberated as a result of overexertion. If they are discharged into the circulation, they can reach structures other than those immediately concerned in the contractile responses. Even distant muscles may thus give evidence of decreased efficiency, that is, fatigue; and the sensation of weariness that arises through the fatigue of muscles shows that nerve cells too can become affected. On general principles one would expect the heart also to exhibit manifestations attributable to fatigue in the skeletal muscles. However, it is a familiar physiologic fact that the heart cannot be thrown into tetanus or fatigue, as can an ordinary muscle, by repeated stimulation. This is presumably due to the peculiar property known as the refractory period, during which stimuli reaching the organ are ineffective. Nevertheless, Mendenhall[1] has shown in the pharmacologic laboratory of the Dartmouth Medical School that the heart, like other tissues of the body, is affected by the products of fatigue. Unlike skeletal muscle, its irritability is increased rather than decreased. Moderate fatigue, carried to a point possible of attainment by voluntary efforts, causes a marked rise in the irritability of the heart muscle. Mendenhall suggests the possibility that such increase in irritability has an adaptive purpose; thus, with increased activity of the skeletal muscles, the heart muscle is influenced by the increase in fatigue products in the circulation, and more readily responds to stimulation. Finally, Mendenhall adds, the continuation of the rapid beating of the heart following exercise may in part be explained by its increase of irritability, due to the presence of fatigue products It is also conceivable that continued fatigue, as in overwork, may give rise to cardiac disturbances that are the result of increased irritability of the heart muscle.

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[4] Osborne, T. B., and Mendel, L. B.: The Vitamins in Green Foods, J. Biol. Chem. **37**: 187, 1919.

[1] Friedmann, E., and Tachau, H.: Biochem. Ztschr. **35**: 83, 1911.

[2] Kingsbury, F. B., and Bell, E. T.: J. Biol. Chem. **21**: 297, 1915.

[3] Lackner, E.; Levinson, A., and Morse, W.: The Rôle of the Liver in Hippuric Acid Synthesis, Biochem. J. **12**: 184, 1918.

[4] Wells, H. G.: J. Exper. Med. **10**: 457, 1908. Underhill, F. P., and Kleiner, L. S.: J. Biol. Chem. **1**: 165, 1908.

THE RELATIVE RETURN IN LAW AND MEDICINE

Some years ago a study was made of the average income of Harvard medical graduates by classes and years of experience. A questionnaire was sent to each graduate for the ten-year period of 1900 to 1910. A large number of the questionnaires were returned, and the following table was compiled:

Year in Practice	Classes									
	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
First	$866	$787	$541	$362	$625	$502	$350	$533	$425	$1,237
Second	827	1,089	790	995	773	826	588	1,250	874	1,083
Third	1,181	1,539	1,412	1,295	995	1,262	1,353	1,025	1,370	1,578
Fourth	1,505	1,694	1,720	1,566	1,559	1,765	1,963	1,575	1,632	1,835
Fifth	2,027	1,556	1,966	1,981	1,818	2,359	2,347	1,847	2,150	
Sixth	2,341	1,837	2,333	2,277	2,347	2,997	3,202	2,360		
Seventh	2,527	2,161	2,654	2,967	3,048	3,650	3,545			
Eighth	3,003	2,491	3,155	3,043	3,337	4,332				
Ninth	3,560	2,900	3,616	3,604	4,500					
Tenth	3,524	2,963	4,135	4,535						
Eleventh	3,885	3,691	4,604							
Twelfth	4,422	4,130								
Thirteenth	4,650									
Maximum number of men	38	39	29	39	33	26	29	29	25	26

In 1912 the secretary of the Harvard law school sent letters to all of the graduates of that school from 1902 to 1911 inclusive, and as a result of that questionnaire the following table was made:

Year	No. of Replies	Average Earnings	Year	No. of Replies	Average Earnings
First	694	$ 664	Sixth	249	$3,118
Second	609	1,110	Seventh	162	3,909
Third	497	1,645	Eighth	112	4,426
Fourth	411	2,150	Ninth	62	5,321
Fifth	317	2,668	Tenth	40	6,825

These tables should, of course, be studied with the thought in mind that only about one half of those written to responded, and that those who did respond probably represented the more successful members of their respective professions. The tables are instructive since they indicate that the returns from these two most important professions cannot begin to compare in actual cash increment with almost any of the ordinary commercial or trade interests. And yet the practice of either law or medicine includes many advantages which assure that the supply will never be far below the demand.

A JURY IN DRY HUMOR

A physician in North Carolina sends us a large advertisement of "Paw Paw Tonic," from which we learn—in 24-point black face capitals—that the "tonic" contains "no alcohol." One gathers from the less prominently featured parts of the advertisement that the preparation does, however, contain port wine! This, in a way, prepares one for the newspaper item which the same correspondent sent in forty-eight hours later, detailing the conviction of a Charlotte, N. C., druggist of selling this nonalcoholic "tonic" to young men who, oddly enough, after partaking of it became drunk and disorderly. Counsel for the druggist maintained that if "Paw Paw Tonic" were taken according to directions the medicine would not produce intoxication. But by an unfortunate *faux pas,* the young men failed to follow directions. Thus far the story is commonplace. The unusual feature in the case is the judge's charge to the jury. He instructed these twelve good men and true to decide whether or not a "patent medicine," which when taken in liberal quantities will produce intoxication, is an intoxicating liquor. The jury decided that such a "patent medicine" *is* an intoxicating liquor! Should this common-sense and rather obvious finding of the jury be held by the courts over the country generally, the large business that purveyors of alcoholic "patent medicines" are expecting to develop after July 1, 1919, will fail to materialize.

CHEAP BUT EFFECTIVE ADVERTISING

"I thought that 'Sal Hepatica' was advertised to the medical profession only," writes a correspondent, "at least I have seen advertisements in medical journals and not in newspapers. But questions put to me by some of my nonprofessional friends make me wonder if it is now advertised to the public." There are two ways of advertising a "patent medicine"—the direct and the indirect. The direct method consists in openly purchasing space in newspapers or on billboards to proclaim the virtues of the panacea. This method is expensive, but has in its favor the probability of quicker returns, and the virtue of an avoidance of commercial hypocrisy. The other method is to call the "patent medicine" an "ethical proprietary," advertise it exclusively in medical journals, circularize the medical profession and send sample packages to physicians. The package should contain one full-sized bottle of the nostrum for the physician himself, and a number of small, single-dose packages for the physician to pass on to his patients. The package, of course, must be distinctive in shape and character, and the name of the preparation duly set forth on the label, with a fairly comprehensive list of pathologic conditions for which the preparation is recommended. It is desirable, also, to have the name blown in the bottle. Disclosure of the formula is entirely unnecessary. There are two advantages in this indirect method. First, cheapness; second, the "patent medicine" goes to the public with the tacit approval of the medical profession. The indirect method takes a little longer to introduce the product, but in the end is just as effective, for enough physicians can always be counted on to act as unpaid agents in its distribution. "Sal Hepatica" is a "patent medicine" advertised by the indirect method.

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[1] Mendenhall, W. L.: Effect of Fatigue on the Heart and Cardio-skeletal Quotient, Am. J. Physiol. 48: 13, 1919.

THE MENACE OF MALARIA

The passing of the winter reminds us that the fly menace and the mosquito pest will soon be with us again. With war time activities almost entirely relegated to the background this season, the people of the United States should take up, with greater vigor than ever before, the great task of eradicating the diseases for which the summer insects are so largely responsible. Foremost stands malaria, which is said to show an incidence of six or seven million cases in this country each year. The difficulties presented are not attributable to ignorance regarding the etiology of the disease or, indeed, to uncertainty regarding the mode of control. Malaria is seven times as prevalent in rural communities as it is in urban centers; hence the large financial outlay involved in essential antimosquito work tends to fall on groups of our population least able to bear the burden. However, it ought to be understood by all parties of our commonwealths that malaria is not only injurious to health but also a business liability. *Public Health Reports,* which has recently disseminated the plea of the United State Public Health Service for renewed vigor in an antimalarial campaign, points out that there is practically no instance known of a white community thriving where malaria seriously prevails. The time for concerted effort has arrived, the possibilities of success have been demonstrated, and the physicians of this country ought to be foremost in the demand for effective preventive measures. We are assured that the Public Health Service will be glad to assist local communities desiring to engage in antimosquito activities. If desired, an experienced sanitary engineer officer will be detailed to advise such communities as to the most practicable measures to be undertaken, and to cooperate in supervising the activities carried on. Requests for such assistance should be made through the state health officer.

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1. Public Health Reports, **34**: 543 (March 21) 1919, contains a list of publications relating to malaria and mosquito control.

The New Athletics.—The athletics of today must be remolded and their object clearly defined. Athletics can surely have no better purpose than to develop a robust and healthy boy who, though he may not be an interscholastic champion or sought after by the larger colleges as likely to increase their fame, will nevertheless enter upon his life work with a symmetrical, fully developed body, capable of resisting disease and of enduring physical strain. For such a young man the training camp, the transport and the trench will not contain the threat of death from disease before his grapple with the enemy.—Lieut. D. F. Luby, *Naval Medical Bulletin,* October, 1918.

Association News

THE VICTORY MEETING

Committee on Arrangements Opens Office and Will Aid Hotel Reservations

The Local Committee on Arrangements for the "Victory Meeting"—the 1919 annual session to be held at Atlantic City, N. J., June 9-13—requests that all correspondence addressed to the committee or to its subcommittees should be mailed to 1801 Pacific Avenue, Atlantic City, N. J., the office of the Local Committee on Arrangements. The committee has found that certain of the hotels located on the Boardwalk are already filled for the week of the annual session. There are, however, ample and excellent hotel facilities still available for those attending the Victory Meeting. It is advisable that hotel reservations shall be made in advance of the annual session, and the Subcommittee on Hotels, Dr. David B. Allman, chairman, or the Central Local Committee on Arrangements itself, Dr. Emery Marvel, chairman, will gladly put Fellows in communication with the management of accredited hotels, at which accommodations may be reserved.

Foreign Guests at the Victory Meeting

The American Medical Association has been officially advised that the following have been appointed by their respective governments to represent the medical profession of their countries at the Victory Meeting:

Belgium—General Melis, Colonel A. Depage, Dr. P. Nolf and Prof. J. Duesberg.

Cuba—Dr. Juan Guiteras, Director of Public Health.
Dr. Emilio Martinez, Professor in the National University.
Dr. Julio Carrera, Chief Surgeon of the Main Havana Emergency Hospital.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending April 4, the Medical Corps contained 19,318 officers, a decrease from the previous week of 337. The Medical Reserve Corps contained 1,460 officers. The total number of medical officers discharged since the beginning of the war is 14,220.

New Chief of Section on Head Surgery

Under date of April 1 Lieut.-Col. Nelson Miles Black, M. C., U. S. Army, was designated as officer in charge of the section of head surgery, Surgeon-General's Office, vice Col. Walter R. Parker.

New Senior Consultant in Neuropsychiatry for A. E. F.

Lieut.-Col. E. G. Zabriskie of New York City has been designated senior consultant in neuropsychiatry for the American Expeditionary Forces, succeeding Col. Thomas W. Salmon, who has returned to the United States for duty in the Surgeon-General's Office. Lieutenant-Colonel Zabriskie went to France as divisional neuropsychiatrist of the fourth division. Subsequently he was consultant in neuropsychiatry to the third and fifth corps and the first army. After the armistice he served as consulting neuropsychiatrist to the Savenay hospital center.

British Greet American Medical Officers

One hundred American medical officers were recently accorded, it is reported, the first official reception ever given by British medical organizations to American physicians. These physicians arrived in London to take up postgraduate work in England. Speakers at the reception included Sir Humphrey D. Rolleston, president of the Royal Society of Medicine, who acted as host; Sir Rickman J. Godlee, president of the Royal College of Surgeons; Sir Norman Moore, president of the Royal College of Physicians, and Sir William Arbuthnot Lane, consulting surgeon to Guy's hospital.

Medical Veterans of World War to Hold Organization Meeting

The acting officers of the Medical Veterans of the World War announce that a meeting for the purpose of effecting a permanent organization will be held Friday evening, June 13, at an hour to be announced in the *Daily Bulletin* issued during the annual session of the American Medical Association. As previously announced Col. F. F. Russell, Army Medical School, Washington, D. C., is secretary of the temporary organization. Those interested should write to him for forms for making application for membership. These applications should be accompanied by a fee of $1 to assist in defraying expenses incident to the organization and in arranging for the Atlantic City meeting. Copies of the constitution and by-laws and application blanks may also be obtained from the headquarters of the American Medical Association. Send stamped addressed envelope.

Army Medical Exhibit

On April 4 there was opened at the Army Medical Museum in Washington an exhibition of the medical activities of the war. The exhibit contains a plan of the proposed medical center at the Walter Reed Hospital, showing the architects' plan and sketches of the medical center, photographs of the present quarters and the military hospital at Fort McDowell, Calif. Another section is devoted to the work of the roentgen-ray department of the Army, showing the different units and apparatus used during the war. A third exhibition concerns infectious diseases and laboratory detail of methods of combating infectious diseases, with a graphic representation of the results. The section on surgery shows, by photographs, methods of removal of wounded, transportation, types of hospitals, wax models showing the effects of mustard gas burns and other injuries and the Carrel-Dakin method of treatment. The section on orthopedic surgery is devoted to orthopedic devices, litters, splints, etc. The division on physical reconstruction illustrates the work of this department in caring for the wounded soldier and developing him so that he may be fit for useful industrial life. The section on neuropsychiatry exhibits by means of charts the work of that department; also by photographs of hospitals and cases displaying clearly some of the difficulties which this department had to overcome. Another section concerns the Army psychologic tests showing the successive steps in testing the mental capacity of officers and soldiers. Section 9 shows by legends and charts the results of physical examinations. Another exhibition is devoted to delousing, showing models of various delousing devices, and especially buildings equipped for this purpose. The food and nutrition division shows the results of the nutritional surveys, and by numerous photographs shows food and mess conditions in the various camps. Other sections display sanitation in the camps and sanitary appliances. The exhibit of the vital statistics division shows the use of the perforated statistical cards by which it is possible to rapidly determine the prevalence of various conditions. The final section, called the war museum of the Army Medical Museum, comprises three sections of materials received from France monthly since the beginning of the war, including weapons, rifles, machine guns, helmets, gas masks, pathologic specimens and wax models.

Weekly Bulletin, A. E. F.

(March 10, 1919)

BLOCKADE EFFECTS IN GERMANY

This number of the *Bulletin* contains extracts from a report of the chief sanitary officer of civilian affairs, advance general headquarters, A. E. F., dealing particularly with undernourishment in Germany. The report points out that the death rate in Hanover has gradually risen from 9.19 per thousand per year in 1913 to 16.40 in 1918; in Berlin, from 13.48 in 1913 to 20.05 in 1918. These figures may be compared with the average death rate of New York state during 1917 of 15.5. It is stated that there were 56,861 deaths from tuberculosis in Prussia in 1913 and 86,217 in 1917, and that the death rate from this disease for Germany has gradually risen from 136.5 in 1913 to 205.7 in 1917.

In other portions of Prussia the death rate has also gradually risen. In the region of Trier it has risen from 102.3 in 1908 to 191.3 in 1918, and in Coblenz from 150 in 1915 to 352 in 1918.

Observers of the population have been led to believe that the war diet has undoubtedly been of advantage to stout, overfed people so that such diseases as diabetes and eclampsia have greatly diminished. No special change has been noted in heart and kidney diseases. Observations of infants lead Dr. V. von Franque to state that the problems, complications and accidents of labor have not increased, but that the average weight of the new-born has decreased from 7 pounds and 4 ounces to about 6 pounds. It is stated, further, that the ability of mothers to nurse infants is decreasing. The minister of the interior states that deaths of children from 1 to 5 years of age increased in Cologne. The report states also that as far as can be ascertained, the entire nation has been rationed since the winter of 1915 and since that time this ration has been under the daily needs of the people and has steadily grown worse. The majority of the people are believed to be far below their normal health weight.

Just how serious the permanent damage will be to each individual or to what proportion of the entire population is impossible to estimate. The shortage of medical and surgical supplies and certain needed drugs has been an unfavorable factor and has led to an increase in the mortality of sick persons.

CONCLUSIONS

Among the conclusions it is stated:

Child Birth. Accidents of labor have not increased. Eclampsia is diminished.

Infants. Children at birth are possibly a little below normal average weight. German authorities state that infant mortality is increasing but there is no evidence to prove it.

Children, 1 to 6 years of age.—The majority of children do fairly well. There is a definite increase in the number of deaths in various localities.

Children of school age—6 to 14 years. These children do badly. There is definite evidence to show that a very large proportion are underfed. They are anemic, poorly nourished and undersized. Children who should be gaining weight each month are losing weight or are remaining stationary. Skin diseases are prevalent. Many children are infested with lice and scabies. Tuberculosis, especially scrofula, is markedly increased.

Adults. Stout persons in good financial condition have lost weight but have been generally benefited. The well-to-do have remained in good condition. The majority of the people are thin, undernourished; their capacity for work and their natural resistance to disease are diminished. The sick in hospitals do badly; resistance is diminished after operations, convalescence retarded. The proportion of cases dying in hospital has markedly increased.

TYPHOID SUSPECTS

With a view to excluding or establishing the diagnosis of typhoid or paratyphoid fever, the chief surgeon has indicated that blood cultures will be taken in the case of all typhoid suspects on admission. If negative, two more blood cultures will be taken at the end of forty-eight and ninety-six hours, respectively, and additional blood cultures will be taken every seven days throughout the course of the illness and on the onset of relapse. In cases of fever of unknown origin three successive blood cultures are to be taken at forty-eight hour intervals, following admission to the hospital. Fecal cultures for typhoid-like organisms are to be made in all cases of typhoid suspects or in fevers of unknown origin of forty-eight hours' duration. Patients in whose stools typhoid-like organisms have been discovered are not to be discharged from the hospital on a duty status until three successive negative fecal and urine cultures have been obtained, the cultures to be taken at weekly intervals. The Widal test is also to be determined at seven-day intervals in each suspected and proved case.

WEEKLY REVIEW

During the past week there have been increases in reported cases of chickenpox (5), diphtheria (13), measles (19), scarlet fever (13) and typhoid fever (30). The reports of typhoid fever totaling 51 cases, include 31 suspects and 3 carriers. Only one case of paratyphoid was reported. Cases of meningococcus meningitis have fallen from 40 to 28 during the past week. The main "foci" of diphtheria are in the army of occupation and in the army troops in and about St. Nazaire. The annual venereal disease rate per thousand strength has risen to 36.69 from 34.20 for the previous week. The cause of the rise in the venereal rate appears to be the greatly increased number of exposures in the leave areas and the high percentage of failure to take prophylaxis after exposure. Medical officers are advised to study the conditions in their own organizations, paying particular attention to the condition of the prophylactic stations and the ratio of exposures to new cases and failure to use prophylaxis.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Modesto—Morgan, J. W.
Weed—Tebbe, W. E.
Woodland—Blevins, W. J.

GEORGIA

Atlanta—Hines, J. H.
Whelchel, G. O.

ILLINOIS

Chicago—Sullivan, T. J.

MARYLAND

Long Green—Green, J. S., Jr.

MASSACHUSETTS

Boston—LeClair, H. H.

MICHIGAN

Detroit—Brengle, D. R.
Harvey, J. G.

MONTANA

Ennis—Clancy, L. J.

NEW JERSEY

Boundbrook—Kaucher, H. L.
Trenton—Kuhl, P. E.

NEW YORK

Binghamton—Sears, H. C.

NORTH CAROLINA

Elizabeth City—Peters, W. A.

OREGON

Portland—White, R. F.

PENNSYLVANIA

Elwyn—Kerr, P. M.
Philadelphia—Mallon, E. A.
Newcomer, H. S.

RHODE ISLAND

Providence—Burgess, A. M.
Kingman, L. C.

SOUTH CAROLINA

Charleston—Green, D. W.
Woodruff—Woodruff, P. E.

VERMONT

Bennington—Lane, J. D.

WASHINGTON

Tacoma—Brobeck, C. J.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Abbeville—Coleman, L. A. (L.)
Albertville—Goode, J. A. (L.)
Anniston—Brothers, T. J. (C.)
Cleveland, C. H. (L.)
Ashland—Graves, A. W. (L.)
Birmingham—Callaway, J. T. (L.)
Cocke, N. P. (C.)
Daly, E. W. (C.)
Rogers, M. (C.)
Wiley, C. C. (C.)
Brilliant—McDiermid, T. S. (L.)
Dothan—Barnett, T. M. (C.)
Ensley—Cowan, A. E. (C.)
Gordo—Davis, L. C. (L.)
Hamilton—Howell, H. W. (L.)
Magnolia Springs—Cowgill, E. P. (L.)
McFall—Barker, E. T. (C.)
Mobile—Bondurant, E. D. (L. C.)
Montgomery — Wilkinson, H. B. (M.)
Tuscaloosa—Lawrence, T. (C.)

ARIZONA

Bisbee—Fitzgerald, G. H. (C.)
Prescott—Southworth, H. T. (M.)

ARKANSAS

Center Ridge — Halbrook, J. F. (L.)
Gurdon—McLain, C. W. (L.)
Helena—Cox, A. W. (C.)
Little Rock—Boyce, S. G. (L.)
Marked Tree—Paullus, G. E. (L.)
Marvell—Davidson, J. S. (L.)
Rector—Parrish, W. O. (C.)
Stamps—Kitchens, W. L. (C.)
Walnut Ridge—Watkins, G. M. (C.)

CALIFORNIA

Alameda—Lum, W. T. (C.)
Bakersfield—Kellogg, C. W. (C.)
Calexico—Ellis, W. L. (C.)
Eureka—Falk, C. C. (C.)
Los Angeles—Cox, E. R. (L.)
Cunnane, T. B. (L.)
Frick, D. J. (M.)
Hastings, G. H. (C.)
McCombs, V. J. (C.)
Moore, J. R. (M.)
Mulvehill, W. W. (L.)
Mayfield—Seibert, F. M. (C.)
Mendocino City—Peirsol, F. C. (L.)
Modesto—DeLappe, F. R. (C.)
Monterey—McAuley, M. (L.)
Oakland—Kergan, J. F. (L.)
Pasadena—Condit, J. D. (M.)
Sherk, H. H. (M.)
Paso Robles—Wilmar, A. H. (L.)
Redding—Dozier, E. (C.)
Sacramento—Loizeaux, E. S. (M.)
San Diego—Waterman, I. J. (L.)
San Francisco—Clark, W. R. P. (M.)
San Francisco—Ely, L. W. (C.)
Green, J. (C.)
Moore, H. S. (M.)
Roger, J. H. D. (L.)
Slavich, J. F. (L.)
Smith, J. J. (M.)
Thibodeau, J. A. (L.)
Tomlinson, R. F. (C.)
San Jose—Gattuccis, B. (L.)
San Leandro—Fehrenson, G. (L.)
Santa Barbara—Brown, R. (C.)
Sawtelle—Roberts, E. E. (C.)
South Pasadena—Burt, R. R. (C.)
Stanford University — DeAngulo, J. (L.)
Stockton — Williamson, N. E. (M.)

COLORADO

Del Norte—Gjellum, A. B. (C.)
Denver—Levy, R. (M.)
Fort Collins—Brownell, W. F. (C.)
Fraser—Harrison, F. H. (C.)
Olathe—Groves, D. C. (C.)
Rocky Ford—Blotz, B. B. (C.)

CONNECTICUT

Bridgeport—Poole, L. E. (C.)
Hartford—Cook, A. G. (M.)
Hutchison, J. E. (C.)
Stoll, H. F. (M.)
Litchfield—Turkington, C. H. (C.)
Middletown—Wiseman, J. I. (C.)
New Haven—Notkins, L. A. (C.)
Norwalk—Muren, G. M. (M.)
Waterbury—Anderson, H. G. (C.)
Bevans, T. F. (C.)

DELAWARE

Wilmington — Lenderman, E. H. (C.)
Zion, S. M. (L.)

DISTRICT OF COLUMBIA

Washington — Alexander, S. A. (L.)
Curtis, A. L. (L.)
Hart, J. W. (M.)
Jones, T. E. (C.)
Larkin, P. E. (C.)
Norcross, A. C. (C.)
Tastet, D. W. (C.)
Thomas, J. D. (C.)

FLORIDA

Clermont—Newnham, J. A. (C.)
Miccosukee — Strickland, E. E. (C.)
Tallahassee—Moor, F. C. (C.)

GEORGIA

Athens—Harris, W. A. (L.)
Atlanta—Boyd, M. L. (C.)
Miller, O. L. (C.)
Roberts, J. W., (C.)
Augusta—Coleman, T. D. (M.)
Mathis, W. H. (L.)
Tappan, W. M. (L.)
Bainbridge—Ehrlich, S. (L.)
Calhoun—Ellis, J. C. (L.)
Catersville—Howell, S. M. (L.)
Devereux—Scott, W. M. (L.)
Eastman—Herrmann, F. H. (C.)
Girard—Royal, L. B. (L.)
Hampton—Lyday, W. H. (L.)
Lavonia—Heller, W. B. (L.)
McDonough—Horton, B. E. (L.)
Moultrie—Massey, W. W. (L.)
Sale City—Belcher, D. P. (L.)
Savannah—DeCaradeuc, S. R. (C.)
Lee, L. (C.)
O'Rear, W. B. (C.)
Valdosta—Bird, F. (C.)
Sloan, W. D. (L.)
Zebulon—Head, M. M. (C.)

IDAHO

Nampa—Hull, A. R. (C.)
Watson, C. E. (C.)
Parma—Numbers, D. S. (C.)
Rockland—Logan, V. G. (L.)
Weston—Quick, R. W. (L.)

ILLINOIS

Aledo—Mackey, A. N. (L.)
Astoria—Price, E. M. (L.)
Belvidere—Alguire, A. (C.)
Bloomington—Maurer, F. R. (L.)
Buffalo—Lutyens, G. B. (L.)
Canton—Hirschle, H. G. (L.)
Centralia—Hall, F. W. (C.)
Champaign — Dallenbach, J. C. (M.)
Davis, C. S. (C.)
Chicago—Beil, H. H. (L.)
Blum, J. M. (C.)
Bulkley, N. C. (L.)
Calhoun, W. H. (L.)
Cleary, J. P. (C.)
Cox, R. H. (M.)
Culbertson, C. (M.)
Damron, J. E. (L.)
Daum, E. F. (C.)
Dickenson, S. C. (C.)
Edison, S. M. (C.)
Evans, J. H. (C.)
Finley, J. R. (L.)
Fox, E. F. (L.)
Glassman, L. (L.)
Guy, S. D. (L.)
Hayden, D. B. (C.)
Johnson, R. M. (L.)
Krohn, W. O. (C.)
Kulyinsky, M. M. (L.)
Lawson, J. F. (L.)
Lueders, A. H. (C.)
Lyngh, S. E. (L.)
MacLane, C. C. (C.)
Novak, F. J., Jr. (C.)
Ogden, A. W. (L.)
Pierce, N. H. (M.)
Pincoffs, M. C. (C.)
Shackelton, W. E. (C.)
Small, J. C. (L.)
Vander Bogart, H. E. (L.)
Dahlgren—Gross, R. R. (L.)
Danville—Ross, H. E. (M.)
Dietrich—Dunn, J. W. (C.)
East St. Louis—Tharp, R. (C.)
Effingham — Wettstein, J. C. R. (L.)
Freeport—Sikes, E. W. (L.)
Highland Park—Roberts, H. B. (C.)
Joliet—Eldred, C. D. (C.)
Kankakee—Dyer, W. K. (C.)
Ricksher, C. (C.)
Lawrenceville—Trumblood, R. R. (C.)
Libertyville—Martin, F. H. (C.)
Litchfield—Bennett, H. F. (C.)
Marengo—Gooder, W. V. (C.)
Marion—Fowler, L. L. (C.)
Marshall—Rose, J. J. (L.)
Momence—Nickerson, A. L. (C.)
Muncie—Michael, O. W. (C.)
Murphysboro—Evans, W. H. (L.)
Newman—Gillogly, R. C. (C.)
Peoria—Crooks, W. A. (C.)
Hubbard, A. E. (L.)
Seaburg, E. W. (L.)
Peru—Yoder, O. C. (C.)
Petersburg—Orr, L. E. (L.)
Pontiac—Bach, I. W. (L.)
Princeton—Schroeder, F. B. (L.)
Rockford—Allaben, G. R. (C.)
Park, W. E. (C.)
Springfield—Coen, W. W. (L.)
Sycamore—Bell, F. H. (C.)
Urbana—Finch, J. H. (M.)
Virden—Morgan, T. W. (C.)
Waukegan—Ambrose, C. S. (C.)
Zeigler—Moore, J. B. (C.)

INDIANA

Dillsboro—Long, H. P. (L.)
Evansville—Ehrich, W. S. (C.)
Fort Wayne—Crull, E. A. (C.)
Duemling, H. A. (C.)
Georgetown—Ricketts, F. B. (L.)
Greenfield — McGaughey, C. W. (C.)
Hammond—Young, A. A. (L.)
Indianapolis—Aubla, C. S. (L.)
Bowman, G. W. (C.)
Clark, E. D. (L. C.)
Criss, N. L. (L.)
Deitch, O. S. (C.)
Erdman, B. (C.)
Pendleton, G. H. (C.)
Leesburg—Fermier, P. G. (L.)
Logansport—Nelson, J. V. (C.)
Marion—McQuown, O. W. (C.)
Martinsville — Breedlove, G. B. (C.)
Mishawaka—Seymour, T. F. (L.)
Noblesville—Tucker, F. A. (L. C.)
Princeton—Cushman, R. A. (C.)
Shelburn—Maple, J. B. (C.)
South Bend—Boyd-Snee, H. (C.)
Terre Haute—Combs, C. N. (C.)
Weir, E. A. (L.)
Union City—Zeller, W. C. (L.)
Warsaw—Truelove, A. O. (L.)

IOWA

Albia—Byers, A. G. (C.)
Cedar Rapids — Johnson, N. W. (C.)
Clinton—Mansfield, J. M. (L.)
Corwith—Fillmore, R. S., Jr. (L.)
Council Bluffs—Fonda, J. W. (L.)
Davenport—Ficke, E. O. (C.)
Des Moines—Lincoln, S. E. (C.)
De Sota—Brewer, M. T. (L.)
Dubuque—Kearney, C. A. (C.)
Pond, A. M. (C.)
Fort Dodge—McCreight, A. H. (C.)
Hampton—Long, W. K. (C.)
Hedrick—Henry, R. V. (C.)
Independence—Allen, H. C. (L.)
Marshalltown—Battin, J. F. (C.)
Mason City—Hoag, H. M. (C.)
Smith, A. D. (L.)
Monticello—Thomas, C. G. (L.)
Mount Pleasant—Laird, J. W. (L.)
North English—Jones, H. J. (M.)
Ottumwa—Bannister, M. (C.)
McElderry, D. (C.)
Remsen—Hombach, W. H. (L.)
Sioux City—Heard, T. M., Jr. (C.)
Naftzger, J. B. (C.)
Titonka—Wallace, R. M. (L.)
Waterloo—Jaynes, E. T. (C.)
Woodbine—Anderson, H. N. (C.)

KANSAS

Bison—Robison, N. W. (C.)
Bucyrus—McGonigle, G. L. (C.)
Ellis—Kidd, N. A. (L.)
Garnett—Hood, T. A. (C.)
Humboldt—Webb, H. M. (L.)
Independence — Chaney, W. C. (C.)
Kansas City—Davis, R. C. (L.)
Kinley, C. E. (C.)
Maplehill—King, G. A. (L.)
National Military Home—Shawhan, R. C. (L.)
Neodesha—Randall, C. L. (C.)
Oswego—Price, C. C. (C.)
Palmer—Hawthorne, H. B. (C.)
Pittsburg—Owensby, O. M. (C.)
Randall—Blades, J. B. (L.)
Rosedale—Marchbanks, H. E. (L.)
Russell—Hawes, F. S. (L.)
Salina—Moses, H. N. (C.)
Topeka—Cook, E. D. (L.)
Gootee, H. W. (L.)
Knowlton, M. (C.)
Wilson—Carter, J. B. (C.)

KENTUCKY

Auburn—Simpson, J. P. (L.)
Bowling Green — McCormack, A. T. (L. C.)
Brandenburg — Hartman, E. C. (C.)
Campbellsville — Buckner, F. L. (L.)
Gage—Ashbrook, W. A. (L.)
Greenville—Yost, E. R. (C.)
Hickman—Prather, H. E. (C.)
Lebanon—Kobert, C. B. (C.)
Lexington—Bradley, E. B. (M.)
Louisville—Arnold, I. A. (C.)
Freeman, J. K. (C.)
Harris, D. H. (C.)
Horine, E. F. (C.)
Sherrill, J. G. (L. C.)
Pembroke—Barker, J. L. (C.)
Pineville—Combs, M. (L.)
Princeton—Ogilvie, R. W. (M.)
Taylorsville — Shepherd, R. Y. (C.)

LOUISIANA

Barham—Self, C. C. (C.)
Baton Rouge—Robert, J. J. (M.)
De Ridder—Frazer, J. D. (L.)
Erath—Kibbe, P. A. (C.)
Jonesville—Yancey, E. R. (L.)
Madisonville—Verdier, C. E. (L.)
Mansura—Roy, K. A. (L.)
New Orleans—Bendel, W. L. (L.)
Carter, P. J. (L.)
Elliott, J. B. (L. C.)
Genella, L. J. (C.)
LeDoux, L. A. (L.)
Leemann, I. I. (C.)
Miller, C. J. (M.)
Pothier, O. L. (M.)
Stone, R. E. (C.)
Poydras—Dunshie, J. F. (M.)
Shreveport—Oden, P. W. (L.)
St. Francisville—Butler, T. (L.)

MAINE

Portland—Clarke, C. L. (C.)
Kalloch, D. C. (C.)
Rumford—Stamwood, H. W. (L.)

MARYLAND

Baltimore—Colston, J. A. C. (M.)
DeBray, E. S. (C.)
Diaz-Garcie, M. (L.)
Ellis, E. D. (M.)
Evans, A. M. (L.)
Evans, F. A. (C.)
Guthrie, C. G. (C.)
Happ, W. M. (C.)
Hoffman, R. V. (L.)
Hutchins, A. F. (C.)
King, J. H. (C.)
Nichols, F. K. (C.)
Slack, H. R. (C.)
Sorenson, A. C. (C.)
Stone, H. B. (M.)
Valentini, J. L. (L.)
Govans—Bishop, G. W. (C.)

MASSACHUSETTS

Ayer—Hopkins, B. H. (C.)
Boston—Briggs, L. V. (L. C.)
Chadwell, O. R. (C.)
Cohen, N. M. (L.)
Eaton, H. B. (C.)
Emmons, A. B. (C.)
Joslin, E. P. (L. C.)
Clinton—Chase, G. L. (C.)
Concord—Bartlett, W. B. (L.)
Fall River—Cox, T. (C.)
MacKnight, W. F. (C.)
Framingham — Jessaman, L. W. (C.)
Great Barrington — Peters, J. D. (M.)
Hatfield—Beals, L. H. (C.)
Hinsdale—Tucker, W. L. (L.)
Lawrence—Burnham, J. F. (C.)
Lowell—Bryant, M. D. (M.)
Lynn—Hartmann, G. (C.)
Merrill, C. H. (C.)
Somerville—McLean, J. A. (C.)
Southbridge—Tetrault, C. A. (C.)
Springfield—Ferguson, R. (C.)
Waverly—Otis, W. J. (M.)
Worcester—Leib, E. R. (L.)
Ward, R. J. (C.)

MICHIGAN

Ann Arbor—Sherrick, J. W. (C.)
Bangor—Murphy, N. D. (C)
Battle Creek—Kellogg, K. H. (C.)
Knapp, H. B. (C.)
Detroit—Carr, J. G. (C.)
Cohoe, D. A. (L.)
Hickey, P. M. (L. C.)
Hoffmeister, G. (C.)
Matthews, J. D. (C.)
Mayer, W. D. (C.)
McDonald, F. J. (L.)
Morris, H. L. (L.)
Myers, G. P. (C.)
Ryerson, F. L. (L.)
Safford, H. E. (C.)
Van Horne, J. A. (C.)
Flint—Orr, J. W. (C.)
Roberts, F. A. (M.)
Ionia—Powers, J. H. (C.)
Kalamazoo—Eaton, D. H. (M.)
Midland—St. Louis, R. J. (L.)
Onaway—Sill, J. (C.)

MINNESOTA

Annandale—Norris, G. H. (C.)
Brinerd—Badeuax, G. I. (L.)
Duluth—Haney, C. L. (C.)
Grand Rapids—Gendron, J. F. X. (C.)
Hopkins—Morris, M. (C.)
Howard Lake—Moffatt, A. G. (C.)
Lowry—Gibbon, L. L. (L.)
Mahnomen — Rumreich, E. A. (L.)
Minneapolis — Rowntree, L. G. (L. C.)
Rice—Rathbun, C. A. (L.)
Sanborn—Piper, M. C. (L.)
Section Thirty—St. Clair, G. G. (C.)
Sleepy Eye—Strickler, A. F. (L.)
St. Paul—Colvin, A. R. (M.)
Hesselgrave, S. S. (L.)
Lemke, G. F. (C.)

MISSISSIPPI

Bentonia—Day, C. A. (L.)
Clarksdale—Bush, T. J. (L.)
Clinton—Powell, J. E. (C.)
Foote—Worthington, T. F. (C.)
Hattiesburg—Martin, L. H. (C.)
Jackson—Walker, C. E. (L.)
Magnolia—Smith, J. M. (L.)
McComb—Gordon, E. R. (L.)
Meridian—Guthrie, J. M. (C.)
Natchez—Ullman, J. S. (C.)
Polo—Parrish, I. N. (L.)
Water Valley—Carr, H. R. (L.)
Webb—Harris, J. A. (C.)

MISSOURI

Anderson—Buck, S. B. (L.)
Cape Girardeau—Yount, W. E. (C.)
Carthage—Post, W. B. (M.)
Corder—Moore, E. M. (L.)
Dadeville—Drisdel, T. J. (L.)
DeWitt—Cole, B. C. (L.)
Fair Play—Brown, C. H. (C.)
Fulton—Major, H. S. (C.)
Gower—Starks, J. C. (L.)
Hawk Point—Butler, J. (M.)
Holcomb—Drace, C. C. (C.)
Jefferson City — Bedford, S. V. (C.)
Kansas City—Hiller, F. B. (M.)
Hofmann, O. (L.)
Kuhn, H. P. (M.)
Lee's Summit—Ragsdale, T. J. (C.)
Louisiana—Miller, I. H. (C.)
Malden—Van Cleve, J. D. (L.)
Odessa—Mills, R. F. (C.)
Orrick—Sheetz, R. (C.)
Piedmont—Toney, L. E. (C.)
Portage Des Sioux—Arnold, U. S. G. (C.)
Potts—Lockwood, W. E. (L.)
St. Joseph—Elam, W. T. (C.)
St. Louis—Ayars, T. R. (M.)
Burdick, J. J. (C.)
Clapsaddle, C. J. (L.)
Gundlach, A. (C.)
Hirschi, W. T. (C.)
Lyter, J. C. (C.)
McIntire, J. C. (L.)
Montague, H. L. (C.)
Moore, N. S. (L.)
Morfit, J. C. (L. C.)
Peden, S. E. (L.)
Post, M. H., Jr. (C.)
Schlueter, R. E. (M.)
Schuck, P. (C.)
Schwab, S. I. (M.)
Sewing, A. H. (C.)
Thompson, J. C. (L.)
Wiener, M. (M.)
Wilhite, G. O. (L.)
Woodruff, F. E. (M.)
Yahlem, N. N. (L.)
Young, H. M. (M.)

MONTANA

Billings—Wernham, J. I. (C.)
Butte—Witherspoon, T. C. (L. C.)
Bozeman—Jump, C. W. (C.)
Corvallis—King, W. N. (C.)
Great Falls—Adams, F. J. (M.)
Havre—MacKenzie, D. S. (C.)
Helena—Johnson, E. A. (C.)
Nashua—Currie, A. N. (C.)

NEBRASKA

Atkinson—Douglas, W. J. (C.)
Belden—Fletcher, F. W. (L.)
David City—Burdick, H. E. (C.)
Florence—Ross, W. L., Jr. (C.)
Genoa—King, H. E. (C.)
Gretna—Pinckney, C. E. (C.)
Hay Springs—Molzahn, A. J. (C)
Kenesaw—Townley, F. N. (L.)
Lexington—Brix, A. E. (L.)
Lincoln—Arnold, C. H. (C.)
Omaha—Lake, F. W. (C.)
Martin, O. W. (C.)
Newell, C. H. (C.)
Nilsson, J. R. (C.)
Stodden, F. J. (L.)
Tamisiea, J. A. (L.)
Uren, C. T. (C.)
Oxford—Cone, E. E. (C.)
Stuart—McDermott, B. V. (L.)
Tecumseh—Cramb, A. B. (L.)
York—King, D. B. (C.)

NEVADA

Tonopah—Church, C. H. (L.)

NEW HAMPSHIRE

Claremont—Cushman, E. P. (C.)
Manchester—Fiske, G. V. (L. C.)
Nashua—Maynard, O. S. (C.)
West Lebanon — Wilson, H. B. (L.)

NEW JERSEY

Barnegat—Bunnell, F. N. (L.)
Barnsboro—Chalfant, W. P. (C.)
Cape May Court House — Douglass, J. S. (C.)
East Orange—Gore, M. E. (L.)
East Rutherford — O'Brien, P. (C.)
Elizabeth—Tilton, W. R. (L.)
Jersey City—Higgins, G. L. (L.)
Tidwell, H. F. (L.)
Long Branch — Strahan, F. G. (L.)
Morristown—Sutphen, E. B. (C.)
Mullica Hill — Chalfant, H. B. (C.)
Newark—Cook, H. F. (C.)
Lowrey, J. H. (L.)
Silverstein, B. J. (L.)
Newton—Cole, B. (C.)
Ocean Gate—Levy, J. J. (L.)
Parlin—Gehrman, G. H. (L.)
Passaic—Carlisle, J. H. (C.)
[illegible] A. (C.)
[illegible] C.)
[illegible], C. B. (C.)
Summit—Allen, E. P. (L.)
Ehlers, E. A. (L.)
Trenton—Seibert, R. S. (C.)
West New York—Roberts, E. W. (C.)

NEW MEXICO

East Las Vegas — Mills, W. P. (M.)
Farmington — Sammons, G. W. (C).
Santa Fe—Erdlitz, F. J. (L.)
Mera, F. E. (C.)
Taos—Martin, T. P. (C.)

NEW YORK

Albany—Howard, W. P. (C.)
Rissberger, C. A. (L.)
Amsterdam—Windhiel, J. E. (L.)
Brooklyn—Brown, F. X. (C.)
Browne, W. T. (C.)
Frank, C. R. (L.)
Laing, W. W. (C.)
Lasher, F. H. (C.)
McWilliams, C. A. (M.)
Miller, S. (C.)
Norton, H. L. (C.)
Richardson, F. H. (C.)
Sim, A. S. (M.)
Buffalo—Brennan, J. P. (C.)
Brundage, F. E. (L.)
Clinton, M. (L. C.)
Lennon, F. J. (L.)
Mann, B. (M.)
McCarthy, A. E. (C.)
Nowicki, J. A. (L.)
Plummer, W. W. (M.)
Camden—Lyons, G. C. (C.)
Cassadaga—Edmund, H. S. (C.)
Clark Mills—Jones, F. G. (C.)
Flushing—Hallstead, W. G. (L.)
Glens Falls—Clarke, H. E. (C.)
Maslon, M. (L.)
Good Ground—Chattle, T. H. (C.)
[illegible] R. (C.)
[illegible] (C.)
[illegible], F. S. (C.)
New York—Babcock, J. W. (L.)
Bishop, F. W. (L.)
Burlingham, R. (L.)
Casamajor, L. (M.)
Cobb, J. L. (C.)
Colie, E. M., Jr. (M.)
Darlington, T. (M.)
Goldstein, T. P. (L.)
Hooker, R. S. (M.)
Hopkins, J. G. (C.)
Joy, H. H. (L.)
Kirwin, T. J. (C.)
Kline, B. S. (C.)
MacCurdy, J. T. (C.)
Marks, T. M. (L.)
McCoy, T. C. (C.)
Morris, J. H. (C.)
Nahum, L. H. (C.)
Oppenheimer, B. S. (L. C.)
Peterson, E. W. (M.)
Phelps, G. M. (C.)
Philips, H. B. (L.)
Schapira, S. W. (M.)
Smith, G. T. (C.)
Somerville, W. A. (C.)
Stillman, A. (M.)
Titus, N. E. (C.)
White, W. C. (C.)
Williams, P. H. (L. C.)
Winslow, T. S. (L.)
Woodbury, W. E. (L. C.)
Niagara Falls—Bishop, J. L. (C.)
Perrysburg—Graves, A. B. (C.)
Rochester—Dessloch, J. C. (L.)
Finch, R. R. (M.)
Saranac Lake—Soper, W. B. (M.)
Schenectady—Dunn, J. M. (C.)
McPartlon, P. (C.)
Syracuse—Kevand, J. H. (C.)
Troy—Noonan, F. J. (M.)
Utica—Baldwin, C. H. (C.)
Westbury—Booth, L. S. (C.)
Yonkers—Boyce, W. E. (M.)
Youngstown—Falkner, L. W. (M.)

NORTH CAROLINA

Atkinson—Hoggard, J. T. (L.)
Fairfield—Burrus, T. P. (L.)
Greensboro—Oliver, A. S. (L.)
Greenville—Laughinghouse, C. O. N. (L. C.)
Laurinburg—Cannady, N. B. (C.)
Matthews—Orr, W. L. (L.)
Raleigh—Abernethy, C. O. (C.)
Rutherfordton—Norris, H. (M.)
Smithfield—Hooks, T. (C.)
Tyron—Palmer, M. C. (C.)
Whiteville—Maxwell, H. B. (C.)

NORTH DAKOTA

Berthold—Hillis, S. J. (M.)
Crystal—Scott, R. A. (L.)
Dickinson—Stickney, V. H. (C.)
Enderlin—Ostrander, A. J. (C.)
Grand Forks — Campbell, R. D. (C.)
Fisher, L. F. (L.)
Healy, H. H. (C.)
Minot—Wheelon, F. E. (M.)
New England — Sarchet, G. A. (C.)
Williston—Skovholt, H. T. (L.)

OHIO

Akron—Dixon, C. A. (C.)
Barberton—Smallman, H. L. (L.)
Stepfield, R. E. (L.)
Bowling Green—Gorsuch, G. A. (C.)
Celina—Gibbons, J. T. (L.)
Cincinnati—Hagen, J. S. (C.)
Souther, C. T. (C.)
Cleveland—Bogart, C. S. (L.)
Kennedy, E. P. (L.)
Sharp, W. D. (C.)
Zinner, N. L. (C.)
Columbus—McDowell, J. R. (M.)
Price, J. (M.)
Rice, R. A. (C.)
Sandoe, D. (L.)
Sharp, C. E. (C.)
Strausbaugh, H. D. (L.)
Taylor, W. N. (L.)
Thornton, R. A. (L.)
Dayton—Burnett, H. W. (L.)
Elyria—Kramer, J. C. (C.)
Findlay—Keator, W. B. (L.)
[illegible] O. (C.)
[illegible] A. G. (C.)
[illegible], L. E. (L.)
Lima—Bradfield, J. C. (C.)
Knisely, A. D. (C.)
London — Christopher, H. V. (C.)
[illegible] M.)
[illegible] C.)
[illegible], J. C. (C.)
Newcomerstown — Berry, E. V. (L.)
Niles—Knox, J. D. (C.)
Oberlin—Colegrove, P. C. (L.)
Orrville—Ulrich, O. P. (L.)
[illegible] .)
[illegible] C.)
[illegible] C.)
[illegible]
[illegible], J. C. (L.)
Urbana—Pearce, H. M. (C.)
Youngstown—Cameron, R. L. (C.)

OKLAHOMA

Altus—Rudell, W. P. (L.)
Anadarko—Edens, M. H. (L.)
Antlers—Guinn, E. (L.)
Bennington—Gentry, I. L. (L.)
Bokoshe—King, J. T. (L.)
Cheyenne—Wallace, G. H. (L.)
Coalgate—Clark, J. B. (C.)
El Reno—Herod, P. F. (C.)
Moore, D. M. (L.)
Henryetta—McKinney, G. Y. (L.)
Hollis—Pendergraft, R. L. (L.)
Hugo—Harris, G. E. (C.)
Lawton—Lewis, J. L. (C.)
Lexington — Thacker, R. E. L. (L.)
Meeker—Hurlbut, E. F. (L.)
Miami—James, E. D. (L.)
Rowley, W. T. (C.)
Muskogee—Earnest, A. N. (C.)

Oklahoma City — Taylor, G. B. (C.)
Jaoli—Lain, E. H. (L.)
Poteau—Winter, J. D. (L.)
Ralston—McBride, E. D. (L.)
Roll—Grant, V. V. (L.)
Tahlequah—Thompson, J. M. (L.)
Talihusa—Shepard, R. M. (L.)
Tulsa—Capps, J. F. (C.)
Mohrman, S. S. (L.)
Waurika—Derr, J. I. (L.)
Woodward—Patterson, J. L. (C.)

OREGON

Dufur—Dodds, H. C. (L.)
Forest Grove—Hawke, C. E. (C.)
Granite Pass—Clement, L. O. (L.)
Lakeview—Fox, M. C. (L.)
Marshfield—Mingus, E. (C.)
Portland—Botkins, A. W. (L.)
Coffen, T. H. (C.)
Folsom, E. B. (M.)
Lieuallen, F. A. (C.)
Vale—Bartlett, C. J. (C.)

PENNSYLVANIA

Allentown—Weaver, J. M. (L.)
Ambler—Gilliland, S. H. (M.)
Apollo—Lewis, R. N. (C.)
Bloomsbury—Bierman, H. (C.)
Bristol—Abbott, C. S. (C.)
Butler—Campbell, E. E. (M.)
Clymer—Everwine, M. J. (L.)
Conneaut Lake — Brush, H. L. (C.)
Connellsville—Junk, J. L. (C.)
Darlington — Watterson, R. W. (L.)
Donora—Hanlon, T. J. (C.)
Doylstown—Murphy, F. A. (L.)
Eldred—Humphreys, F. R. (L.)
Erie—Davis, A. G. (L.)
Ireland, J. L. (C.)
Lloyd, J. H. (C.)
Glenolden—Turner, J. H. (L.)
Harrisburg—Treiman, G. A. (L.)
Indiana—Gates, W. D. (C.)
Mahanoy City—[illegible], G. S. (L.)
Monessen—Farquhar, D. C. (C.)
New Castle—Lindley, D. C. (L.)
Nicholson—Decker, V. (C.)
Oxford—Barry, C. L. (C.)
Philadelphia—Bond, E. D. (M.)
Cahan, J. M. (L.)
Cattell, H. W. (M.)
Donahue, J. L. (C.)
Fisher, L. (M.)
Gorman, J. F. (L.)
Haines, W. H. (L.)
Knight, I. W. (C.)
Martin, A. T. (C.)
Miller, R. J. (L.)
O'Daniel, A. A. (C.)
West, J. W. (C.)
Wingrade, S. L. (L.)
Pittsburgh—Atkinson, P. G. (L.)
Baker, T. (C.)
Brenneman, R. E. (M.)
Bowen, C. J. (L.)
Clarke, J. J. (C.)
Frank, A. G. (C.)
Hood, R. T. (L.)
Major, R. S. (C.)
Punxsutawney—Klotz, J. A. (L.)
Republic—Ryan, C. C. (L.)
Saltsburg—Lytle, R. M. (L.)
Schwenkville—Allen, H. C. (M.)
Scranton—Noecker, C. B. (C.)
Sewickley—McCready, F. L. (C.)
Shanor, C. K. (C.)
Sharpsburg—Diess, W. C. (L.)
Sharpsville—Biggnis, P. E. (L.)
Spinnerstown—Marsteller, V. K. (L.)
Tarentum—Orris, C. S. (L.)
Titusville—Eiler, V. B. (C.)
Wilkes-Barre—Ross, N. (C.)
Wilkinsburg—Pitcairn, E. A. (C.)
Woodbine—Smith, W. C. (L.)
Woodsville—Hill, R. L. (M.)
York—Parker, B. F. (C.)

RHODE ISLAND

Providence—Capwell, R. P. (C.)
Hanchett, A. K. (M.)
Noyes, I. H. (C.)

SOUTH CAROLINA

Chester—Love, S. G. (L.)
Columbia—Weston, W. (M.)
Mayesville—Mills, J. H. (L.)
Rock Hill—Rakestraw, C. M. (C.)
Bigger, D. A. (L.)
Scotia—Fishburne, C. C. (L.)

SOUTH DAKOTA

Deadwood—Moffitt, T. W. (C.)
Fulton—Lowthian, G. H. (C.)
Scotland—Landmann, G. A. (C.)
Wagner—Pinard, P. R. (C.)
Willow Lake—Benner, W. J. (C.)

TENNESSEE

Franklin—Cliffe, D. B. (C.)
Harriman—St. John, G. F. (C.)
Idol—McDonald, B. L. (M.)
Jackson—Saunders, W. G. (M.)
Lexington—Davidson, C. L. (L.)
Memphis—Haase, M. (M.)
Karsch, J. H. (C.)
Somerville, W. G. (M.)
Watkins, E. D. (C.)
Nashville—Hardy, W. M. (L.)
Harris, A. W. (C.)
Lassiter, J. H. (C.)
Lee, J. M. (C.)
Pulaski—Blackburn, J. K. (C.)

TEXAS

Abilene—Alexander, S. M. (C.)
Alvin—Pollard, A. J. (L.)
Archer City—Hooper, J. M. (C.)
Bellville—Neely, J. A. (L.)
Brackettville—Nipper, W. W. (C.)
Bridgeport—Braselton, B. E. (C.)
Brownsville—Dickason, E. E. (C.)
Dalhart—Dawson, G. W. (C.)
Dallas—Ard, B. N. (L.)
Carlisle, G. L. (L.)
Morris, I. J. (C.)
Newsom, H. G. (L.)
Pierce, F. A. (C.)
Travis, R. T. (L.)
Turner, J. S. (C.)
Denison—Morrison, M. M. (L.)
Detroit—Caton, J. H. (L.)
El Paso—Cummins, E. J. (C.)
McCamant, T. J. (M.)
Fort Worth—Cleaves, P. B. (C.)
Hayes, C. F. (C.)
May, J. C. (L.)
Terrell, T. C. (L.)
Warwick, H. L. (C.)
Frisco—Frechet, E. A. (C.)
[illegible] B. O. (M.)
[illegible] E. C. (L.)
[illegible] B. (L.)
[illegible], G. S. (L.)
Houston—Delambre, J. J. (L.)
Denman, P. R. (M.)
Goar, E. L. (M.)
Legnard, J. B. (C.)
Hubbard—Etter, R. (L.)
Humble—Dameran, J. H. (C.)
Falvey, J. C. (L.)
Loit—Parrott, F. C. (C.)
Marshall—Baldwin, J. B. (L.)
New Brainfels — Hagler, M. C. (C.)
Oakland—Pridgen, R. E. (L.)
Paducah—Wilkins, J. S. (C.)
Palacios—Loos, H. H. (L.)
Park Springs—Norris, J. (C.)
San Antonio—Cade, C. C. (C.)
Gibson, J. F. (C.)
McDaniel, A. C. (M.)
Sorell, F. W. (C.)
Timmins, O. H. (L.)
Santa Anna—Holland, W. F. (L.)
Sherman—Holt, J. H. (L.)
Taylor—Bledsoe, R. E. B. (C.)
Temple—Kimmins, R. L. (C.)
Longmire, V. M. (L.)
Texarkana—Smith, J. K. (L.)
Tyler—Pope, J. H. (L.)
Waco—Collins, C. E. (L.)
Yoakum—Milner, R. M. (L.)

UTAH

Garland—Day, J. E. (L.)
Marysvale—Heath, C. J. (C.)
Ogden—Dumke, E. R. (C.)
Payson—Curtis, A. L. (C.)
Salt Lake City—Galligan, J. J. (C.)
Goeltz, F. A. (L.)

VERMONT

Barre—Woodruff, J. H. (C.)
Rutland—Marshall, G. G. (C.)
Waterbury—Goodrich, S. L. (C.)

VIRGINIA

Alexandria—Moore, S. B. (M.)
Appalachia—Smith, H. R. (L.)
Litwalton—Peirce, C. T. (C.)
Newport News—Armory, O. T. (C.)
Norfolk—Etheridge, H. R. (L.)
Richmond—Geisinger, J. F. (C.)
Harris, H. L. (L.)
Roanoke—Jones, A. P. (C.)
Rural Retreat — Greiner, A. B. (L.)
Staunton—Bradford, K. (C.)
University—Lile, M. C. (C.)
Smith, R. E. (C.)
Waterford — Rusmiselle, L. T. (C.)

WASHINGTON

Aberdeen—Goodnow, L. L. (C.)
Bellingham — Kirkpatrick, W. D. (M.)
Chewelah—Hauber, C. A. (L.)
Fort Worden—Payne, W. H. (C.)
Hoquiam—Hunter, R. F. (C.)
Medical Lake—Allen, J. A. (C.)
Monroe—Cox, E. W. (C.)
Olympia—Roberts, N. E. (C.)
Puyallup—Barry, S. D. (C.)
Roslyn—Piro, V. (L.)
Seattle—Lanter, E. C. (L.)
Shuler, I. J. D. (L.)
Swift, G. W. (C.)
Spokane—Miller, F. S. (L.;
Tacoma—Curran, T. B. (C.)
McNerthney, W. B. (C.)
Yakima—Moffitt, L. (L.)

WEST VIRGINIA

Fairmont—Peters, A. L. (C.)
Powell, R. H. (M.)
Morgantown—Hott, D., Jr. (C.)
Parkersburg—Barker, O. D. (C.)
Link, W. S. (C.)
Sheperdstown—Bragonief, R. K. (L.)
Sistersville—Keller, F. E. (L.)
Wheeling—Kelly, M. B. (C.)

WISCONSIN

Barron—Post, C. C. (C.)
Beloit—Helm, H. M. (L.)
Chetek—Prill, J. H. (C.)
Dale—Johnston, W. M. (L.)
Edgerton—Shearer, A. T. (L.)
Elroy—Vogel, C. C. (M.)
Greenwood — Boeckmann, F. A. (L.)
Lake Mills—Eck, G. E. (C.)
Menomonee Falls—Campbell, W. B. (C.)
Milwaukee — Ackermann, W. B. (C.)
Mitten, A. A. (C.)
Seaman, G. E. (Col.)
Stevens Point—Bird, J. W. (C.)
Watertown — Nowack, L. H. A. (L.)
Waukesha—Aplin, F. W. (C.)

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Fort McPherson, Ga., from Camp Dix, Major W. M. JORDAN, Birmingham.

To Hoboken, N. J., from Camp Jackson, Lieut. J. D. DURDEN, Montgomery.

The following order has been revoked: *To Camp Gordon, Ga.*, Capt. J. R. OSWALT, Union Springs.

Arizona

To Camp Travis, Texas, as tuberculosis examiner, from Fort Sam Houston, Capt. S. D. WHITING, Salt River.

Arkansas

To report to the commanding general, Philippine Department, from Camp Pike, Major G. D. CHUNN.

California

To Camp Kearney, Calif., from Camp Dix, Major W. A. MORRISON, Los Angeles. As commanding officer of base hospital, from Camp Fremont, Lieut.-Col. C. W. HAVERKAMPF.

To Fort Sam Houston, Texas, base hospital, from Camp A. A. Humphreys, Lieut. R. W. KARRAS, Soldiers Home.

To Fort Sill, Okla., from Camp Kearney, Col. F. W. PALMER.

To San Francisco, Calif.. Letterman General Hospital from Baltimore, Capt. P. WEGEFORTH, San Diego; from Camp Dix, Lieut.-Col. W. I. BALDWIN, Major J. L. WHITNEY, San Francisco; from Camp Fremont, Capts. D. P. FLAGG, C. L. LOWMAN, Los Angeles; Lieut. C. D. SWEET, Fresno.

Colorado

To Fort D. A. Russell, Wyo., from Camp Dix, Major L. C. BOLTON, Cedaredge.

To Fort Sill, Okla., base hospital, from Denver, Capt. C. G. McEACHERN, Denver.

Connecticut

To Camp Devens, Mass., base hospital, from Camp Dix, Capt. H. L. BURR, Middletown.

To Camp Upton, N. Y., as tuberculosis examiner, from New Haven, Capt. L. J. LOEWE, Higganum.

To Hoboken, N. J., from Army Medical School, Lieut.-Col. G. W. HAWLEY, Bridgeport; from Camp Jackson, Lieut. W. J. H. FISCHER, Milford.

To Lakewood, N. J., from New Haven, Major A. FREER, Lieut. J. B. ANDERSON.

To Walter Reed General Hospital, D. C., from Camp Custer, Capt. Capt. A. E. AUSTIN, South Beach.

To Washington, D. C., and on completion *to Camp Jackson, S. C.*, base hospital, from Camp Dix, Lieut. J. F. O'BRIEN, Hartford.

District of Columbia

To Army Medical School, D. C., from New Haven, Major R. D. ADAMS, Washington.

To Fort Washington, Md., from Camp Dix, Capt. A. M. ZINKHAN, Washington.

To Washington, D. C.. Surgeon-General's Office, from Hoboken, Major D. L. BORDEN, Washington.

Florida

To Walter Reed General Hospital, D. C., from Camp Jackson, Lieut. R. H. KNOWLTON, Petersburg.

To Washington, D. C., Surgeon-General's Office, *from* Camp Sherman, Capt. T. Z. CASON, Jacksonville.

Georgia

To Fort McPherson, Ga., from Camp Dix, Lieut. J. E. MORRISON, Savannah; from Camp Jackson, Capt. T. J. COLLIER, Atlanta.

To Washington, D. C., and on completion to *Fort McPherson, Ga.*, from Camp Dix, Major E. V. KELLER, Atlanta.

Illinois

To Arcadia, Fla., Carlstrom Field, as assistant flight surgeon, from Millington, Tenn., Capt. D. R. SCOTT, Macomb.

To Camp Sherman, Ohio, base hospital, from Camp Custer, Lieut. M. J. KOSTRZEWSKI, Chicago.

To Chicago, Ill., from Camp Custer, Capt. P. M. CLIVER, Chicago.

To Fort Des Moines, Iowa, from Rockefeller Institute, Lieut. K. W. WAHLBERG, Moline.

To Fort Sam Houston, Texas, from Ann Arbor, Capt. O. T. ROBERG, Chicago.

To Fort Sheridan, Ill., from Camp Custer, Lieut. J. W. MILLER, Chicago; from Camp Dix, Major M. HANCHETT, Lieuts. B. R. PAR-

KER, W. A. TAYLOR, Chicago; from Fort Des Moines, Lieut. L.
COLE, Oak Park; from Hoboken. Major [illegible] POLLOCK, Chicago.
To report to the [illegible] ... [illegible]ern Department, from
South San Antonio, [illegible], Chicago.
To Sparta, Wis., f[illegible], Major O. YARNELL, Decatur.
To Walter Reed General Hospital, D. C., from Camp Jackson, Lieut.
To Walter Reed General Hospital, D. C., from Camp Jackson, Lieut.
J. STERN, Chicago. For instruction, and on completion *to Colonia*,
N. J., from Rockefeller Institute, Lieut. D. C. SIGWORTH, Chicago.
To Williamsbridge, N. Y., from Chicago, Capt. G. C. TALLERDAY,
Chicago.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. J. T. MEYER, Chicago. *To Fort Oglethorpe* for instruction, Capt. P. GRONNERUD, Chicago.

Indiana

To Camp Abraham Eustis, Va., camp hospital, from Fort Sam Houston, Lieut. C. E. QUINN, Burlington.

To Fox Hills, N. Y., from Fort Sam Houston, Lieut. L. C. SAMMONS, Shelbyville.

To Fort Sheridan, Ill., from Camp Dix, Capt. L. J. QUILLIN, Warsaw.

To report to the [illegible] Hawaiian Department, from Fort Riley, Lieut. J. [illegible] Philippine Department, from Fort Sheridan, Major [illegible] Montezuma.

To Walter Reed General Hospital, D. C., from Camp Custer, Capt. E. H. KATTERHENRY, Indianapolis.

Iowa

To Eastview, N. Y., from Hoboken, Lieut. M. J. FITZPATRICK, Mason City.

To Fort Des Moines, Iowa, from Camp Dix, Capt. A. B. PHILLIPS, Clear Lake.

To Fort Sheridan, Ill., from Fort Des Moines, Lieut. F. C. NILSSON, Laurens.

Kansas

To Fort McHenry, Md., from Camp Dix, Capt. C. W. ZUGG, Great Bend.

To Fort Riley, base hospital, from Camp Dix, Capt. M. TRUEHART, Sterling.

To Fox Hills, N. Y., from Camp Dix, Major H. WILKINSON, Kansas City.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Hampton, Capt. S. D. WETHERBY, Middletown; from Camp Dix, Capt. O. P. HODGE, Grants Lick; from Walter Reed General Hospital, Lieut. T. M. DORSEY, Louisville.

To Washington, D. C., and on completion *to Biltmore, N. C.*, from Rockefeller Institute, Lieut. J. H. HAESSLER, Louisville.

Louisiana

To Camp Shelby, Miss., as tuberculosis examiner, from Camp Bowie, Lieut. B. R. HENINGER, New Orleans.

To Eastview, N. Y., from Camp Dix, Lieut.-Col. T. P. LLOYD, Shreveport.

The following order has been revoked: *To Camp Beauregard*, base hospital, Capt. T. E. WRIGHT, Monroe.

Maine

To Camp Devens, Mass., as tuberculosis examiner, from Camp Wadsworth, Capt. C. R. O'BRIEN, Bangor.

To Whipple Barracks, Ariz., from West Baden, Lieut.-Col. R. V. BLISS, Bangor.

Maryland

To Camp Wadsworth, S. C., from Camp Jackson, Lieut. W. A. BRIDGES, Towsen.

To Fort McHenry, Md., from Camp Dix, Lieut. C. A. REIFSCHNEIDER, Baltimore.

To Fox Hills, N. Y., from Camp Lee, Lieut. H. B. RICHARDSON, [illegible]

[illegible] *Hospital, D. C.*, from Camp Shelby, Lieut. [illegible]imore.

[illegible]urgeon-General's Office, from Hoboken, Col. T. R. BOGGS, Baltimore.

Massachusetts

To Boston, Mass., from Camp Dix, Capt. J. J. STACK, Boston.

To Camp Devens, Mass., from Camp Dix, Major E. A. COATES, JR., Chelsea.

To Camp Grant, Ill., base hospital, from Camp Hancock, Capt. A. N. BALL, Northampton.

To Camp Joseph E. Johnston, Fla., from Boca Grande, Fla., Lieut.-Col. W. J. MIXTER, Boston.

To Camp Meade, Md., base hospital, from Camp Dix, Lieut.-Col. J. W. LANE, Boston. *To examine the command* for cardiovascular diseases, from Camp Custer, Capt. G. M. ALBEE, Worcester.

To Lakewood, N. J., from New Haven, Lieut. A. G. C. SCHNACK, Cambridge.

To Newport News, Va., from Camp Meigs, Capt. M. M. JORDAN, Westboro.

To Walter Reed General Hospital, D. C., from Lakewood, Lieut. C. C. STURGIS, Boston.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. F. A. WASHBURN; from Newport News, Lieut.-Col. L. B. BRIGGS, Boston.

The following orders have been revoked: *To Camp Sevier, S. C.*, base hospital, from Camp Sherman, Capt. G. L. VOGEL, Boston. *To Camp Shelby, Miss., to examine the command* for nervous and mental diseases, from Camp Sheridan, Lieut. C. B. PARTINGTON, Framingham.

Michigan

To Camp Grant, Ill., as orthopedic surgeon, from Camp Custer, Capt. H. W. LONG, Escanaba.

To St. Louis, Mo., from Williamsbridge, Capt. J. S. BROTHERHOOD, Grand Rapids.

The following order has been revoked: *To Fort Logan H. Roots, Ark.*, from Camp Beauregard, Lieut. R. G. KARSHNER, Big Rapids.

Minnesota

To Fort Sheridan, Ill., from Camp Dix, Capt. A. E. COMSTOCK, St. Paul.

To Fort Snelling, Minn., from Camp Meade, Lieut. H. W. STONE, Minneapolis; from Hoboken, Lieut. P. A. WARD, Minneapolis.

To report to the commanding general, Southern Department, from South San Antonio, Capt. J. C. WILKINSON, Red Lake Falls.

To Washington, D. C., Surgeon-General's Office, from Rochester, Major D. L. WINN.

Missouri

To Fort Sheridan, Ill., from Camp Dodge, Capts. H. D. HAMILTON, Kansas City; L. S. LUTON, St. Louis; from Camp Travis, Capt. H. C. CREVELING, St. Louis.

To Fox Hills, N. Y., from Camp Dix, Capt. E. K. DIXON, St. Louis.

To St. Louis, Mo., from Camp Dix, Lieut. O. F. FLADER, St. Louis; from Fort McHenry, Capt. F. J. TAINTER, St. Charles; from Fort Sheridan, Capt. C. A. LEAVY, St. Louis.

To Walter Reed General Hospital, D. C., from New York, Major G. E. SCRUTCHFIELD, Marshall.

To Washington, D. C., Surgeon-General's Office, from Camp Lewis, Capt. R. L. RUSSELL, Humansville.

The following order has been revoked: *To Camp Fremont, Calif.*, Lieut. A. B. JONES, Shackleford.

Montana

To Camp Jackson, S. C., base hospital, from Biltmore, Lieut. G. A. LEWIS, Roundup.

To Fox Hills, N. Y., from Long Beach, Lieut. G. F. TURMAN, Missoula.

To report to the commanding general, Hawaiian Department, from Fort Riley, Capt. J. H. RIFFEY, Hedgesville.

The following order has been revoked: *To Fort Des Moines, Iowa*, from Camp Meade, Capt. A. G. FULLER, Missoula.

Nebraska

To Fort Omaha, Neb., from Fort Monroe, Capt. G. R. GILBERT, Omaha.

To Metuchen, N. J., Raritan Arsenal, from Fort McHenry, Major S. R. HOPKINS, Hastings.

New Hampshire

To Fort McHenry, Md., from Camp Devens, Capt. C. F. NUTTER, Nashua.

New Jersey

To Camp Bowie, Texas, base hospital, from Camp Dix, Major F. W. PINNEO, Newark.

To Camp Dix, N. J., from Lawrenceville, N. J., Capt. C. BROWNE, Princeton.

To Camp Meade, Md., base hospital, from Camp Dix, Major H. D. BELLIS, Trenton.

To Fort Bayard, N. M., from Camp Dix, Lieut. G. B. FLETCHER.

To Pittsburgh, Pa., from Fort Sheridan, Lieut. R. D. VREELAND, Passaic.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Lieut.-Col. J. R. MOUNT.

New York

To Arcadia, Fla., Carlstrom Field, from Everman, Texas, Major S. M. STRONG, New York.

To Camp Dix, N. J., from Camp A. A. Humphreys, Lieut. K. N. BOSTANIAN, New York; from Pedrickstown, N. J., Lieut. G. FLAMM, Oneida. On completion *to New York*, Bellevue Hospital, from Hoboken, Major J. A. HARTWELL, New York.

To Fort McHenry, Md., from Camp Dix, Major I. W. LIVERMORE, Gowanda; from Walter Reed General Hospital, Major A. H. PARSONS, Great Neck.

To Fort Sill, Okla., Post Field, from Everman, Texas, Capt. W. A. SCRUTON, New York.

To Fort Slocum, N. Y., from Camp Dix, Lieut. S. MORSE, New York.

To Fort Thomas, Ky., from Camp Upton, Col. C. P. ROBBINS.

To Fox Hills, N. Y., from Camp Dix, Capt. H. R. KUTIL, New York; from Fort Sill, Lieut. M. B. SHARKEY, Syracuse; from Hoboken, Major F. HARNDEN, Brooklyn.

To Hampton, Va., Langley Field, as sanitary inspector, from Camp Shelby, Lieut. L. M. ROHR, Brooklyn.

To Hoboken, N. J., from Camp A. A. Humphreys, Capts. M. F. HEALY, P. S. SABINE, New York; from Camp Dix, Capt. F. T. OWENS, Utica; from Camp Upton, Lieut.-Col. E. GOLDSTEIN, Brooklyn; from Long Beach, Major C. D. NAPIER, Brooklyn.

To Lakewood, N. J., from Army Medical School, Lieut.-Col. A. H. CILLEY, New York; from New Haven, Lieuts. R. E. CUMMINGS, New York; T. M. CALLADINE, JR., Perry. For instruction, and on completion *to St. Louis, Mo.*, from Walter Reed General Hospital, Major R. A. KINSELLA, New York.

To Newport News, Va., from Hoboken, Lieut. H. W. KEMP, Brooklyn.

To New York, from Fort McPherson, Lieut. M. I. ROVEN, New York.

To Pittsburgh, Pa., from Camp Dix, Capt. J. J. SINNOTT, Mount Vernon.

To Jefferson Barracks, Mo., from Camp Dix, Major J. F. W. MEAGHER, Brooklyn; Capt. W. C. DICKINSON, Oneonta; from Fort Benjamin Harrison, Capt. C. C. CORYELL, New York; from Fox Hills, Lieut.-Col. A. VON SCHRADER; from Long Beach, Major W. A. CONLON, Central Islip.

To report to the commanding general, Western Department, from Camp Fremont, Capt. C. M. MEYER, New York.

To Schenectady, N. Y., from Camp Hancock, Capt. G. W. WILLCOX, Hamilton.

To St. Louis, Mo., from Long Beach, Lieut. S. TRIPLER, Oswego.

To Walter Reed General Hospital, D. C., from Camp Meade, Capt. R. G. SNYDER, New York.

To Washington, D. C., Surgeon-General's Office, from Camp Hancock, Lieut.-Col. F. J. BARRETT, New York; from Hoboken, Lieut.-Col. H. ZINSSER, New York.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. R. G. HAYS, Brooklyn. *To Pittsburgh, Pa.*, from Camp Dix, Lieut. H. J. McDONALD, Buffalo.

North Carolina

To Camp Jackson, S. C., base hospital, from Camp Dix, Capt. C. GARRENTON, Bethel.

To Walter Reed General Hospital, D. C., from Lakewood, Lieut. J. T. WEARN, Charlotte.

Ohio

To Camp Sherman, Ohio, as tuberculosis examiner, from Camp Dodge, Capt. W. T. SPRAGUE, Athens.

To Camp Upton, N. Y., base hospital, from Hoboken, Lieut. L. S. KEMP, Canton.

To Hoboken, N. J., from Eastview, Capt. F. M. BURNS, Cincinnati.

To Lakewood, N. J., from New Haven, Lieut. I. B. SMOCK, Canton.

The following order has been revoked: *To Rantoul, Ill.,* Chanute Field, from Everman, Texas, Lieut. J. T. McBRIDE, Dayton.

Oklahoma

To Biltmore, N. C., from Camp Jackson, Major L. L. BUNKER, Enid.

To Fort Des Moines, Iowa, from Camp Dix, Major R. V. SMITH, Tulsa.

To Fort Sam Houston, Texas, from Camp Dix, Lieut. A. G. HUNT, Howe.

To Kearney, N. J., from Fort Caswell, Lieut. H. C. BRADLEY, Oklahoma City.

To report to the commanding general, Southern Department, from South San Antonio, Capt. S. E. MITCHELL, Stigler; Lieut. H. C. SCHENCK, Muskogee.

The following order has been revoked: *To Camp Jackson, S. C.,* base hospital, from Biltmore, Capt. R. E. RUNKLE, El Reno.

Oregon

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Capt. L. SELLING, Portland.

The following order has been revoked: *To Fort McHenry, Md.,* from Hoboken, Major J. M. WAUGH, Hood River.

Pennsylvania

To Camp Dix, N. J., from Madison Barracks, Major J. W. BAUMAN, Lansdale. As tuberculosis examiner, from Army Medical School, Capt. R. L. ENGLE, Philadelphia.

To Camp Meade, Md., from Camp Grant, Capt. H. L. W. WIGNALL, Pittsburgh.

To Governors Island, N. Y., from Madison Barracks, Lieut. J. A. COEN, Bristoria.

To Hoboken, N. J., from Camp Dix, Capt. R. C. FAGLEY, Kulpmont; from Camp Jackson, Lieut. O. H. BINKLEY, Pittsburgh.

To Houston, Texas, Ellington Field, from Dallas, Lieut. C. R. BRENNER, Pittsburgh.

To New Haven, Conn., from Camp Dix, Lieut. J. A. BUCHANAN, Stricklersville.

To Philadelphia, Pa., from Camp Dix, Major D. P. WILLARD, Philadelphia; Capt. H. C. EARNSHAW, Bryn Mawr.

To Pittsburgh, Pa., from Camp Dix, Lieuts. J. H. KREIDER, Harrisburg; J. A. CUOZZO, Hazleton.

To Roland Park, Md., from Baltimore, Capt. C. R. EASSICK, Reading.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Capt. E. E. JOHNSON, Norristown.

To Walter Reed General Hospital, D. C., for instruction, from Metuchen, Lieut. C. L. McCOY, Pittsburgh. On completion *to Fort McHenry, Md.,* from Rockefeller Institute, Lieut. W. F. WHITE, Wellsboro.

To Washington, D. C., Surgeon-General's Office, from Fort Sam Houston, Lieut. W. H. HAINES, Philadelphia.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. J. A. WEIRBACH, Quakertown. *To Washington, D. C.,* from Newport News, Major R. S. McCOMBS, Philadelphia.

Philippine Islands

To Camp Custer, Mich., from San Francisco, Major H. L. FREELAND, Manila.

Porto Rico

To San Diego, Calif., from Southwestern Department, Major E. I. VAUGHN, Central Aguirre.

Rhode Island

To Camp Dix, N. J., as tuberculosis examiner, from Otisville, Lieut. W. B. DAVIDSON, Pawtucket.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to Camp Meade, Md.,* from Rockefeller Institute, Lieut. J. E. McCABE, Providence.

South Dakota

To Fort Snelling, Minn., from Camp Custer, Capt. W. A. BATES, Northville.

To report to the commanding general, Southern Department, from South San Antonio, Lieut. J. H. CRAWFORD, Castlewood.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. O. B. SHEETS, Carthage.

Tennessee

To Camp Lee, Va., base hospital, from Camp Jackson, Capt. J. E. LACY, Jasper.

To Newport News, Va., from Camp Fremont, Lieut. G. T. WILHELM, Memphis; from Fort McPherson, Capt. G. A. HATCHER, Nashville.

To Philadelphia, Pa., from Camp Joseph E. Johnston, Capt. J. F. MASSEY, Fountain City.

To Schenectady, N. Y., from Camp Hancock, Lieut. E. E. BYRD, National Soldiers Home.

Texas

To Camp Sheridan, Ala., base hospital, from Camp Jackson, Capt. L. E. HASTINGS, Dallas.

To Camp Travis, Texas, from Camp A. A. Humphreys, Lieut. E. O. ARNOLD, Corpus Christi.

To Houston, Texas, Ellington Field, from Dallas, Capt. L. C. G. BUCHANAN, Big Springs; Lieut. J. T. COLWICK, Dallas.

To report to the commanding general, Central Department, from Denver, Capt. L. O. DUDGEON, Sweetwater. Southern Department, from South San Antonio, Lieut. S. C. APPLEWHITE, San Antonio.

The following order has been revoked: *To Lakewood, N. J.,* from Fort Oglethorpe, Lieut. W. R. MOORE, Spur.

Virginia

To Camp Grant, Ill., base hospital, from Camp Lee, Lieut. J. B. FITTS, Richmond.

To Pittsburgh, Pa., from Camp Jackson, Lieut. D. S. DIVERS, Roanoke.

Washington

To Fort Snelling, Minn., from Army Medical School, Lieut.-Col. J. C. GRAVES, Jr., Spokane.

Wisconsin

To Camp Lee, Va., as orthopedic surgeon, farom Fort Sheridan, Lieut. J. D. GILLIS, Wauwatosa.

To Camp Sherman, Ohio, base hospital, from Camp Custer, Lieut. H. C. SALTZSTEIN, Milwaukee.

To Fort Sheridan, Ill., from Camp Dix, Major R. KAYSEN, Plymouth.

To Pittsburgh, Pa., from Camp Custer, Lieut. F. NEE, Spring Green.

Wyoming

To Fort Snelling, Minn., from Chicago, Lieut. E. E. DALE, Lusk.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Personal.—Dr. Wheeler S. McCall, Blytheville, has recently returned after service in France.

Public Health Service Discontinued.—The city council of Little Rock has received notices from the United States Public Health Service that the government will close the station at Little Rock about June 30, on account of there being no funds available for the continuance of the work. The Red Cross activities will also be discontinued on the same date because of the lack of funds. This work has been carried on under the following heads: malaria control, communicable disease control, venereal disease control, school inspection, public health nursing, control over production and sale of milk and milk products, control over preparation and sale of foods and drinks, control over slaughtering and sale of meats, control over barber shops and manicure parlors, sanitary inspection and sanitation, rural sanitation, laboratory, publicity, education, and general health work not included under the foregoing heads.

CALIFORNIA

Physicians Lose Licenses.—The state board of medical examiners, March 21, is reported to have revoked the medical licenses held by Drs. James Ottis, Burnette and George H. Richardson, Los Angeles, charged with having performed illegal operations.

Lane Lecture.—The sixth popular medical lecture under the auspices of the medical faculty of Leland Stanford Junior University, San Francisco, was delivered, March 31, at Lane Hall, by Dr. William C. Hassler, San Francisco, who spoke on "The Control of Epidemics."

Correction.—In the California news which appeared in The Journal, March 22, it was stated that Dr. Slocomb R. Edwards had been appointed chief of the ear, nose and throat department of Leland Stanford Junior University. Dr. Edwards notifies The Journal that this is an error, as his appointment is as assistant to Dr. Edward C. Sewell, San Francisco, chief of the Lane Ear, Nose and Throat Clinic of Stanford University.

Personal.—Dr. Timothy Lyman, Sacramento, has resigned as superintendent of the Sacramento County Hospital, and located in Eau Claire, Wis.——Dr. Thomas B. W. Leland, coroner of San Francisco County, formerly Surgeon, Lieut.-Com., U. S. Navy, and senior medical officer of the Second Division of the Pacific Fleet, has been discharged from the service.——Dr. William J. Galbraith, Burbank, has been appointed district surgeon for the Southern Pacific System.——Dr. George H. Sciaroni, Fresno, has been placed in charge of the social disease clinic to be established at the Fresno City Hospital.

GEORGIA

Healthology.—The bulletin of Georgia State Board of Health has been made a monthly instead of a quarterly publication, and Roy C. Werner, B.S., has been appointed its editor.

Personal.—Dr. Charles R. Bullock, Kirkwood, Capt., M. C., U. S. Army, on duty with the Seventh Division overseas, has been promoted to Major, M. C.——Edwin S. Byrd, Capt., M. C., U. S. Army, Atlanta, who went overseas in September, 1918, has been honorably discharged from the service and has taken up practice in Moultrie.

IDAHO

New Tuberculosis Hospitals.—March 14, Governor Davis signed House Bill No. 117, passed by the legislature, which authorizes a tax levy to provide funds for the establishment of two tuberculosis hospitals in the state.

Personal.—Frederick T. Harris, Capt., M. C., U. S. Army, Lewiston, who has been in France for about eight months, has been promoted to Major, M. C., U. S. Army.——Johan Christian Wilk, Capt., M. C., U. S. Army, Moscow, has been promoted to Major, M. C.——Joseph Aspray, Capt., M. C., U. S. Army, Moscow, who has been serving overseas, has returned, received an honorable discharge, and resumed practice.——Dr. Fred A. Pittenger, Boise, has been appointed physician to the soldiers' home.

ILLINOIS

Full-Time County Superintendent.—The draft of a bill was completed, April 2, under the direction of Dr. C. St. Clair Drake, Springfield, director of health, which provides a full-time health superintendent for each county in Illinois at a salary of not less than $1,800 a year.

Medical Society Reorganized.—Physicians of Williamson County met in Marion, March 13, to reorganize the Williamson County Medical Society, and elected the following officers: president, Dr. Dallas S. Boles, Herrin; vice president, Dr. Edward E. Woodside, Marion, and secretary-treasurer, Dr. Joseph G. Parmley, Marion.

Orthopedic Clinics for Deformed.—Clinics are now being held in sixteen of the principal cities of Illinois for the free relief of children from various deformities and physical defects. The work is being done under the direction of the child hygiene department of the state, of which Dr. Clarence W. East, Springfield, is in charge.

Chiropractors Fined.—Miss Clara Kaep, a chiropractor of Rockford, was arrested by an inspector of the Department of Registration and Education of the State of Illinois for practicing without a license, and was fined $25 and costs.——J. C. Shrock, a chiropractor of Verdun, was arrested by the department of registration and education, and fined $50 for practicing medicine without a license.

Personal.—Dr. James W. MacDonald has been elected first president of the Union League Club, Aurora.——Dr. C. St. Clair Drake, Springfield, director of the state department of public health, delivered an address before the Illinois Academy of Science at Jacksonville on "The Effect of the War on Science, and the Responsibility and Opportunities of Science under the New Order of Things—Medicine and Public Health."——Drs. William Barnes, Clare A. Garber, Charles E. Hildreth and Robert L. Morris have been appointed members of the board of directors of the department of social hygiene of Decatur. This department will have charge of the free venereal clinic which is to be opened at the Decatur and Macon County Hospital.

Chicago

Loyola Faculty Changes.—Dr. Bertha Van Hoosen has been appointed professor and acting head of the department of obstetrics; Dr. Louis D. Moorhead has been appointed secretary of the faculty; Dr. George W. Wilson, of the Rockefeller Institute, professor and head of the department of pathology, bacteriology and preventive medicine; Ruben Myron Strong, Ph.D., formerly professor and head of the department of anatomy at Vanderbilt University, Nashville, Tenn., has accepted a similar position, and Dr. Thesle T. Job, of the University of Iowa, Iowa City, and Dr. Alden B. Dawson, formerly of Harvard, have been appointed assistant professors of anatomy, in Loyola University School of Medicine.

Personal.—Dr. Joseph L. Miller, Lieut.-Col., M. C., U. S. Army, has returned from military service and resumed practice.——Albert B. Yudelson, assigned to duty at the Hôpital La Fouche for a year, has returned and resumed practice.——Dr. Thomas A. Woodruff announces his removal to New London, Conn.——Harry E. Mock, Lieut.-Col., M. C., U. S. Army, has been selected as one of the delegates for the United States at the Interallied Reconstruction Congress to meet in Rome, next month.——Henry F. Lewis, Major, M. C., U. S. Army, has returned to Chicago and resumed practice.——Dr. Ethan A. Gray has been appointed medical member of the District Case Board of the Federal Board for International Education, Eighth District, which comprises Illinois, Wisconsin and Michigan.——J. W. Vanderslice, Capt., M. C., U. S. Army, has returned to Chicago and resumed practice.

Base Hospital Returns.—Under command of Major Payson L. Nusbaum, 146 men of Base Hospital No. 12, the Northwestern University Base Hospital Unit, reached New York on the *Leviathan*, April 2. The unit is to be demobilized at Camp Grant after a short preliminary stay at Camp Mills. Among the officers in the home-coming group are Majors Herbert B. Woodard, Martin R. Chase, Toulon, Walter H. Nadler, Summer L. Koch and Charles W. Freeman; Capts. Joseph J. Lebowitz, John T. B. Bird, Walter L. Stranberg, Hillier L. Baker, Charles E. Lindsay, Willis S. Gibson, Robert W. Eaton, Cyril J. Glaspel, John Henkin, Erying O. Ravn, Lyman A. Copps, Alexander H. Barnett, Edwin Robert Talbot, Willis C. Strange, Stanley W. Clark and Charles A. Short, and Lieuts. Clarence W. Robertson, Walter S. Sieworth, William Henry Johnson and Elmer C. Roberts, M. C., U. S. Army.

INDIANA

Personal.—Dr. George R. Andrews, Muncie, who has been seriously ill, is reported to be improving.——Dr. Arthur F. Fagaly, Lawrenceburg, has been reappointed a member of the Dearborn County Board of Health.

District Society Meeting.—The Thirteenth District Medical Society at its meeting held in Goshen, March 20, reelected Dr. John C. Fleming, Elkhart, president; Dr. Samuel C. Loring, Plymouth, vice president, and Dr. Charles C. Dubois, Warsaw, secretary.

Physicians Convicted.—Dr. George Koons, Indianapolis, is reported to have been found guilty of violation of the Harrison Narcotic Law and to have been fined $25 and costs and given a suspended sentence of ninety days in jail.——Robert Clark, Batesville, who pleaded guilty in Bartholomew Circuit Court to the charges of practicing medicine without a license, is said to have been fined $200 and costs and sentenced to imprisonment at the state farm for 200 days.

IOWA

Children's Hospital Opened.—The new Children's Hospital at the University of Iowa, Iowa City, was informally dedicated, March 23. The building has cost $150,000 and is constructed in pavilion style. The administrative section is two stories in height, the upper rooms being used as quarters for interns, and is connected by corridors with the orthopedic and pediatric wards. The institution will accomodate about 100 patients.

Personal.—Wilbur S. Conkling, Major, M. C., U. S. Army, Des Moines, commanding officer of the 117th Sanitary Train, 42d Division, and stationed at Neuenahr, Germany, has been promoted to lieutenant-colonel, M. C.——Lee E. Shafer, Lieut., M. C., U. S. Army, Walcott, has returned after fifteen months' service with the American Expeditionary Forces in France.——Charles L. Patterson, Capt., M. C., U. S. Army, Westside, has returned after eleven months in France.——Dr. William J. Egloff, Mason City, who has been seriously ill, has recovered.——Dr. Peter E. James, Elk Horn, who has been in ill health for a long time, has left for California.——Dr. Floyd B. Langdon, Des Moines, has resigned as physician of Polk County.

LOUISIANA

Personal.—John B. Elliott, Jr., and J. Birney Guthrie, Capts., M. C., U. S. Army, both of New Orleans, have returned from France.

Hospital Unit Homeward Bound.—The Loyola Hospital Unit, made up of approximately 300 New Orleans men and women, which sailed for France, July 10, 1918, sailed from Genoa for the United States, March 29. The organization is commanded by Joseph A. Danna, Lieut.-Col., M. C., U. S. Army, and William W. Leake, Major, M. C., U. S. Army, is head of the surgical division of the unit.

Medical Staff for Venereal Clinic.—Dr. Oscar Dowling, president of the state board of health, announces the following appointments on the medical staff of the Venereal Hospital and Clinic at Alexandria, which is maintained by the parish of Rapides, and the city of Alexandria, and the United States Public Health Service, under the charge of Dr. Charles

M. Abbott, Ponchatoula: Dr. Mayer A. Newhauser, New Orleans, chief of the clinic; Mr. J. H. O'Neill, sanitary engineer and assistant director for the state board of health, and J. D. Lobanhoffer, chief of the laboratory.

MARYLAND

Personal.—Dr. Martin F. Sloan, superintendent of Eudowood Sanitarium, Towson, has left for his home in San Antonio, Texas.

Lectures on Motherhood.—The first of a series of public lectures on the problems of "Motherhood" was given by Dr. J. Whitridge Williams, Baltimore, of the Johns Hopkins University, in the lecture room of the School of Hygiene and Public Health, April 3. In the lectures, which are for the education, advancement and protection of motherhood, Dr. Williams will deal with marriages, the health of mothers, unwholesome causes affecting the birth rate of the present age, care and health of babies, and educational equipment necessary for handling the problem of motherhood. The lectures, which are free to women of Maryland, are the result of the Child Welfare Drive conducted by the Women's Section of the Maryland Council of Defense, in cooperation with the Children's Bureau of the government.

Appropriation to Take Care of Insane Soldiers.—The problem of taking care of the state's insane soldiers was solved recently by the action of the executive committee of the Maryland Council of Defense in appropriating $25,000 for that purpose. Since all the hospitals for the insane in the state are crowded, the only way accommodations can be provided for soldiers is by equipping the building at the Spring Grove State Hospital, known as the Arthur D. Foster Psychopathic Building. The need of these facilities is urgent; and now that the amount necessary to complete the building has been appropriated, work will be begun immediately and the building will be ready for occupancy by July 1. The government has arranged to pay the maintenance for the patients, provided the state will provide housing accommodations.

MINNESOTA

Personal.—Dr. Ignatius J. Murphy, St. Paul, has resigned as assistant secretary of Minnesota Public Health Association to take up postgraduate work in Boston.——Dr. Bernard J. Gallagher, Lieut., M. C., U. S. Army, Waseca, who was attached to the British army, captured at the Battle of the Somme and imprisoned at Villingen, Germany, delivered an address at the noonday meeting of the Hennepin County Medical Society, April 2.——John C. Staley, Major, M. C., U. S. Army, St. Paul, on duty with Base Hospital No. 25 at Nantes, France, has been promoted to Lieut.-Col., M. C.——Leonard G. Rowntree, Lieut.-Col., M. C., U. S. Army, chief of the Department of Medicine of the University of Minnesota Medical School, has returned from abroad.

MONTANA

Personal.—Ellis A. Johnston, Capt., M. C., U. S. Army, Helena, has returned after a year of service with the American Expeditionary Forces in France.

County Health Officer.—The commissioners of Gallatin County met at Bozeman, March 31, and agreed to cooperate with the local authorities and establish a health organization under the charge of a whole-time health officer. It is understood that Bozeman will pay one third of the expense of the department.

Health Talks to Boys.—Arrangements have been completed with the state board of health in cooperation with the United States Public Health Service working with the Young Men's Christian Association and local speakers to give lectures to boys of 14 years and over in the public schools of the state, on the evils of venereal disease and the importance of keeping fit.

NEW YORK

Clean Up Week.—In a letter to mayors, village presidents and boards of health, Dr. Hermann M. Biggs, state commissioner of health, designates the week beginning April 14 as the annual clean up week. The local authorities are requested to take steps to notify all citizens of the date and the purpose of Clean Up Week, and are also urged to make arrangements for the proper disposal of all refuse collected during the week.

Uniform Budget Systems.—A uniform budget system has been prepared by the state department of health, the state comptroller, the New York State Conference of Mayors and certain other city officials for the use of second and third class cities. This is now being sent to health officers. In addition to the budget there is a uniform departmental accounting system which has been planned for health officers. It is believed that the uniform budget system will not only be useful to the cities for which it is intended but will also be of value to the health officers of consolidated districts as well as of all the larger villages of the state. It is being sent to all such officials.

Amendments to Sanitary Code.—The following amendments to the Sanitary Code, adopted by the Public Health Council of the New York State Department of Health went into effect, March 1:

In regulation 36 of Chapter 11 the following paragraph was inserted: "Typhoid or paratyphoid fever, if the patient's occupation involves the handling of milk, dairy products, or other food, until all signs of the disease, or secondary or complicating infections incited by the agents of these diseases, have disappeared, and until two successive specimens of the intestinal discharges of the patient have been taken at an interval of not less than seven days and have been examined in a laboratory approved by the state commissioner of health and found to be free from typhoid or paratyphoid bacilli."

Regulation 13 relating to the delivery of milk has been amended to read: "Such milk must be delivered within thirty-six hours after pasteurization between April first and November first and within forty-eight hours after pasteurization, between November first and April first, *and such cream within forty-eight hours* after pasteurization, unless a shorter time is prescribed by the local health authorities."

The resolution regarding the qualifications of Public Health Nurses requiring that these nurses be 21 years of age and registered at the time of their appointment has been repealed.

The following regulation on shaving or lather brushes has been added: "No shaving or lather brush shall be manufactured, offered for sale, or used unless the hair or bristles thereof shall have been so treated for the purpose of destroying anthrax germs as to conform with the regulations of the state commissioner of health."

New York City

Personal.—Dr. Royal S. Copeland, commissioner of health, has issued a statement announcing his intention to resign "within a reasonable length of time," that is, after the mayor has had an opportunity to choose a successor for the office.——Dr. Simon Flexner, director of laboratories of the Rockefeller Institute for Medical Research, has been elected an associate member of the Paris Biological Society.

Community Health Committee.—At a meeting of the Community Councils for National Defense held, April 5, under the chairmanship of Dr. Lee K. Frankel, a health community council was appointed to bring health questions clearly before the people. The committee includes Drs. S. Josephine Baker, John W. Brannan, Henry Dwight Chapin, Sigismund S. Goldwater, Louis I. Harris, L. Emmett Holt, E. H. Lewinski-Corwin, Ralph Waldo Lobenstine, Frederick Peterson, Thomas A. Storey, Simon Tannenbaum, Herbert B. Wilcox, and Thomas D. Wood and a number of men and women interested in public health work.

Revision of the Workmen's Compensation Act.—At a special meeting of the executive committee of the Physician's Protective Association at New York, April 2, resolutions were adopted setting forth the fact that the governor has demanded immediate revision of the workmen's compensation act, to protect direct settlement between indigent employees and insurance carriers, and calling the attention of the governor and legislature to a similar condition relating to the payment of physicians' fees by the insurance companies, owing to the impotency of the provisions of the workmen's compensation law either to provide a proper fee for medical service or to compel the payment of the fee awarded by the commission against the insurance companies, and urging that the governor include in his proposed revision of the workmen's compensation law a remedy for this form of injustice to the medical profession.

Report of Public Health Committee.—The report of the principal activities of the Public Health Committee of the New York Academy of Medicine for the year 1918 has been submitted to the academy by the secretary of the committee, Dr. James Alexander Miller. Among the subjects which have engaged the attention of the committee and on which opinions have been expressed and advice offered are included: malnutrition among schoolchildren; drug addiction; industrial diseases; reorganization of the city department of health; chief medical examiner; harbor pollution; nursing problem; dispensaries; influenza, and city budget. A number of miscellaneous subjects were also submitted to the committee for special inquiry and study, among which were ventilation in institutions for children, the mortality of women from puerperal causes, the home hospital experiment for tuberculous families, community councils, the control of venereal diseases, the medical problems of the Home Service Section of the American Red Cross, physical training of schoolchildren, and the situation in reference to garbage removal.

Bill Providing Care for Tuberculous.—A bill introduced into the legislature by Senator Julius Miller, and carrying an initial appropriation of $1,000,000, provides for state and county aid in the treatment of poor persons suffering from tuberculosis. According to the terms of this bill the state should pay one third, the county one third, and the patient himself, or through funds supplied from private sources, one third of the cost of care and treatment. Local health authorities are required to make a survey of their districts and report to the state health department a list of private institutions, boarding houses or dwellings in their districts suitable to receive and care for tuberculous persons. The state health department, after investigation, is to certify a list of such places in different parts of the state and to maintain a system of inspection after these have begun to operate under health department license. The state and county aid would continue as long as the local authorities deem treatment necessary, but in no event more than a year. The plan provides only for patients who are not bedridden or in need of bedside care or nursing. The state department of health is authorized to fix uniform rates for board and lodging in licensed places. A person must be a citizen of the United States and must have resided in New York State for one year to come in under the benefits of this plan.

NEBRASKA

Sectarian Bill Postponed.—The state senate recently postponed indefinitely Senate Bill No. 190, which provided for the establishment of a department of eclectic and a department of homeopathic medicine in the University of Nebraska College of Medicine, Omaha. This bill was fostered by the State Eclectic Medical Society, and this legislature is the third to defeat a measure of like character.

Personal.—Roy Johnson, Lieut., M. C., U. S. Army, Holdrege, returned, March 26, from overseas service.——R. Allyn Moser, Lieut., M. C., U. S. Army, Omaha, who was on duty with the British Army in France and later with the American Expeditionary Forces, has returned from abroad.——Dr. Samuel J. Stewart, Hastings, has been appointed a member of the advisory board to the state board of health, succeeding Dr. William T. Johnson, Pawnee City, deceased.——Dr. Frederick A. Sedlacek, Omaha, is a member of the American Red Cross Commission to Serbia which sailed from San Francisco, March 25.

NORTH CAROLINA

State Society Meeting.—The annual meeting of the Medical Society of the State of North Carolina will be held, April 15-17, at Pinehurst. April 14, the North Carolina Health Association will convene.

Personal.—Joseph H. Way, Major, M. C., U. S. Army, Waynesboro, and president of the North Carolina State Board of Health, who has been for nearly two years in the United States service, has been honorably discharged and has resumed practice.——Charles O'H. Laughinghouse, Lieut.-Col., M. C., U. S. Army, Greenville, a member of the North Carolina State Board of Health, recently returned from overseas, has been discharged and resumed practice.——Dr. C. Curtis Hudson, city health officer of Charlotte, was presented with a silver loving cup by the Rotary Club of that city at a dinner a short time ago.

OHIO

Hospital Opened.—The Greenfield Hospital, Greenfield, was formally opened, March 26. The president of the institution is Dr. Robert J. Jones.

Nonmedical Bill Signed.—The Talley bill which regulates nonmedical practitioners, and which has passed the house and senate, was signed by Governor Cox, March 19.

Personal.—Dr. Aldo V. Sibert has been named physician of the Lima health clinic.——Campbell F. G. Norlin, Cleveland, has been appointed medical superintendent of the Cleveland City Hospital, succeeding Dr. Thomas A. Ellison.——Roland E. Skeel, Major, M.C., U. S. Army, Cleveland, who has just returned from France, delivered an address in Lorain, April 1, on "American Surgeons in the War—A Lesson in Preparedness."——Charles H. MacFarland, Major, M. C., U. S. Army, Cleveland, has been promoted to Lieut.-Col., M. C., U. S. Army, and is now in command of Evacuation Hospital No. 23, Coblenz, Germany.——Dr. Grant S. Van Horn, Batavia, has been appointed physician of Clermont County.——James E. Miller, Capt., M. C., U. S. Army, Steubenville, has returned after nearly a year of service in France.——Benjamin C. Barnard, Major, M. C., U. S. Army, Alliance, in command of Field Hospital 309, American Expeditionary Forces, France, has been cited "For conscientious devotion to duty and untiring energy in caring for sick and wounded under exceptional adverse circumstances, from Nov. 2 to Nov. 20, 1918, following an attack on Nov. 1, 1918."——Dr. Harry L. Rockwood, acting health officer of Cleveland, has resigned and will enter private practice.

Cincinnati

Personal.—J. Louis Ransohoff, Major, M. C., U. S. Army, has returned from abroad.——Charles E. Kiely, Lieut., M. C., U. S. Army, formerly neurologist of Cincinnati Base Hospital No. 25, who has been on duty for nine months at Allery, France, has returned.

PENNSYLVANIA

Society Urges Improvements.—The Allegheny County Medical Society, after an inspection of the Tuberculosis Sanatorium and the Muncipal Hospital, sent a communication to the County Council, May 24, asking that an item for $500,000 be inserted on the proposed bond issue to be voted on by the people, for improvements to these institutions.

Personal.—Dr. Howard L. Hull, Camp Hill, has been appointed chief medical inspector of the state department of health of Pennsylvania.——Dr. Fred H. Bloomhardt, Captain, M. C., U. S. Army, Altoona, on duty with the Three Hundred and Twenty-First Infantry, has been promoted to lieutenant-colonel, and is taking a postgraduate course in medicine at the Sorbonne, Paris.——Dr. Marianna Taylor, Wayne, has been placed in charge of the medical department of the reconstruction work carried on by the Society of Friends in France.

Philadelphia

Mary Scott Newbold Lectures.—The second of the Mary Scott Newbold Lecture Series was given at the College of Physicians of Philadelphia, April 4, by Col. Thomas W. Salmon M. C., U. S. Army, on "War Neuroses and Their Lesson."

Personal.—Dr. Marie K. Formad of the Women's Hospital has returned from France, where she has been the past year doing relief work among the refugee civilians.——Hubley R. Owen, Captain, M. C., U. S. Army, former chief surgeon of the fire and police departments of Philadelphia, arrived in New York, April 5, and will go to Camp Custer, Mich., to be mustered out.——Dr. James R. Bean has been appointed health commissioner and director of the State Cooperative Laboratory, Oshkosh, Wis.

Workmen's Compensation Law Meeting.—At a stated meeting of the Philadelphia County Medical Society held in Thompson Hall, College of Physicians, April 9, amendments to the workmen's compensation law were the subjects of discussion. The speakers were Harry A. Mackey, chairman of the Workmen's Compensation Board of Pennsylvania; Francis H. Bohlen, general council of the workmen's compensation bureau of Pennsylvania; Mr. Charles A. Gill, superintendent of the Germantown Hospital, and Dr. Fred L. Van Sickle, Olyphant, president of the Medical Society of the State of Pennsylvania.

VIRGINIA

Personal.—Stuart McGuire, Lieut.-Col., M. C., U. S. Army, Richmond, director of Base Hospital No. 45, American Expeditionary Forces in France, has returned from overseas, has been elected president of the Medical College of Virginia, and has gone to Florida to take a few weeks of rest.——Dr. William F. Mercer has been elected associate professor of laryngology in the Medical College of Virginia, succeeding Dr. Samuel C. Bowen, deceased.——Dr. Isaac C. Harrison, Danville, qualified, March 14, as a member of the state board of medical examiners, succeeding Dr. Richard S. Martin, Stuart, deceased.——Dr. John L. Nall, Danville, is reported to be ill with smallpox.——James H. Smith, Joseph F. Geisinger and Robert H. Wright, Capts., and Beverley F. Eckels, Lieut., M. C., U. S. Army, all of Richmond, members of the McGuire Base Hospital Unit, have returned from France.

CANADA

Hospital News.—For an emergency hospital for Vancouver, B. C., the British Columbia government will give a donation of $3,000, the city giving a like amount.——The Invalided Soldiers' Commission will establish a new military hospital at Saskatoon, Sask.

Personal. — Dr. Peter V. Faucher, Quebec, has been appointed professor of materia medica of Laval University, Montreal.——Dr. L. G. McCabe, Windsor, fractured his leg recently while playing baseball.——Lieut.-Col. Clifford H. Reason, London, Ont, who is commanding No. 3 Stationary Hospital, Doullans, France, will shortly return to his home.——Dr. Gideo Silverthorn, Toronto, who recently returned from Florida, is ill with double pneumonia.——Dr. Lewis L. Reford is expected home in Montreal next week from overseas.——Sir Thomas G. Roddick has returned to Montreal after spending the winter in Florida.

LATIN AMERICA

Plague in Argentina.—A report from Buenos Aires states that the government has sent a commission into the province of Jujuy for the purpose of fighting an epidemic of bubonic plague which is reported to be serious.——The Santiago dispensary reports 605 cases of typhus fever with thirteen deaths.

Death of Penna.—The sudden death of Dr. José Penna, professor of epidemic diseases at the University of Buenos Aires, known the world around as an authority on epidemiology, and a pioneer in public health matters, is reported. He had long been on the editorial staff of the *Semana Medica,* and was a member of local, national and international scientific associations.

Public Hygiene in Paraguay.—The *Revista Medica del Uruguay* reports that the Departamento Nacional de Higiene and the Asistencia Publica in Paraguay have been consolidated. A number of new decrees have been promulgated, among them some relating to the drinking water, to child labor, to drainage of swamps, hygiene of markets, veterinary inspection, disinfection of vehicles, municipal charities, and the sending of commissions into the interior of the country for purposes of prophylaxis and treatment of diseases.

GENERAL

Debarkation Hospital Abandoned.—It was announced, March 25, that Debarkation Hospital No. 52, Richmond College, Va., had been discontinued, its use being no longer required.

Tri-State Physicians to Meet.—The semiannual meeting of the Northern Tri-State Medical Association will be held at Elkhart, Ind., April 30, under the presidency of Dr. George V. Brown, Detroit.

Bequests and Donations.—The following bequests and donations have recently been announced:

For the continuance and extension of the social service department of Sloan Maternity Home as a memorial to Dr. Edward B. Cragin, voluntary subscription for $50,000.

Harvard University, the income on the residuary estate of Horace Fletcher, to be used to "foster knowledge of healthful nutrition."

St. Joseph's, St. Mary's and St. Agnes' hospitals, Philadelphia, each $1,000 by the will of Charles McElvaney.

Warning.—The readers of The Journal are warned against a man claiming to be J. F. McClure, of the McClure and Freeman Supply Company, Freeman Building, Cincinnati. He claims to represent a cooperative automobile supply company. He is said to have imposed on a number of physicians in different towns in North Carolina. There is no such firm as McClure and Freeman. The man against whom this warning is directed is about 6 feet in height, weighs 170 pounds, has had a left sided facial paralysis, is clean shaven, well dressed, and appears to make a specialty of dealing with physicians.

Armour and Co. to Make Physical Examinations of All Employees.—Armour and Company are planning to renew medical examinations of the 12,900 men and women working in the Chicago plant. This work was discontinued during the war because of the urgency of orders placed to keep the fighting forces supplied with food and the enormous amount of extra labor needed. Dr. Volney S. Cheney and a corps of assistants will have charge of the work. Through their welfare bureau and their staff of doctors the company offers this service free to the workers. In case defects which have interfered with a man's work are brought to light, he is transferred to some other task in the plant which, in the opinion of the medical men, he is better able to perform.

Court Awards Damages for Death Resulting from Anthrax Contracted from a Shaving Brush.—Anthrax contracted from a shaving brush was the cause of a suit recently brought by Mrs. Emma McCarroll Lindsey against the S. H. Kress Company of New Orleans, which was tried in the federal court at Biloxi, Miss. Mrs. Lindsey stated that her husband bought a shaving brush from the Kress Company. While shaving he cut himself slightly and some of the lather from the brush got into the scratch. He soon developed anthrax which caused his death. Evidently the brush was made from the bristles of an animal that had died of the disease, the bristles not having been sterilized and rendered safe before being converted into a shaving brush. Mrs. Lindsey was awarded $6,500 damages.

Aid Asked for Establishment of Siberian University.—In a letter addressed to American and Canadian Men of Science, Prof. W. Boldireff, the distinguished Russian chemist and scientist, appeals for aid in the way of equipment, both scientific and ordinary, including books, funds, instruments, apparatus, furniture, etc., for the establishment of a medical school at Vladivostok to become ultimately a department in a new university in eastern Siberia. He points out that at present science and research have practically been abandoned in Russia except in the Petrograd Military Academy and in the University and Technological Institute at Tomsk. The Petrograd Academy of Science and the Petrograd, Moscow and Kazan universities, with the latter of which Professor Boldireff was connected, have ceased their activities, and their teaching faculties have been scattered. At present there are available for the new school at Vladivostok men sufficient for a teaching staff who have interested themselves with Professor Boldireff in the establishment of an institution for medical and scientific teaching, and it is believed a student body of 250 could be gathered for the opening year, provided the start can be made this year. At present there are neither funds nor equipment of any kind available for the school, and an urgent appeal is made to scientific men of other countries, especially the United States and Canada, to interest themselves without delay in the equipment of the school.

Conference of Red Cross Societies.—With a view of preparing a program to relieve suffering and combat disease in the general interest of humanity, the Committee of Red Cross Societies called a conference of leading medical experts of the world to convene at Cannes, France, April 1. These first conferences at Cannes are preliminary, on the part of the Committee of Red Cross Societies, to formulating and proposing to the Red Cross societies of the world an extended program of Red Cross activities in the interest of humanity. The first conference, according to announcements, undertook to prepare a program dealing with the organization of the International Council and Bureau of Hygiene and Public Health, which will consider the work to be undertaken in connection with the prevention of epidemic disease, tuberculosis, venereal disease and child welfare. Specialists in attendance are the recognized authorities on these subjects. As a result of these conferences a complete program will be made which will deal with the latest and best means to relieve suffering and combat disease. This program will be submitted at a conference of all Red Cross societies to be held in Geneva thirty days after peace is officially declared. The call for this later conference was issued, February 13, by the International Red Cross at Geneva. Announcement of the formation of the Committee of Red Cross Societies was made in Paris about three weeks ago. It has established headquarters at Cannes, with administrative headquarters at 2 Place de Rivoli, Paris. The committee is composed of representatives of Red Cross societies of France, Great Britain, Italy, Japan and the United States, with Henry P. Davison, formerly chairman of the War Council, American Red Cross, as chairman.

FOREIGN

Influenza in Japan.—The statistics at Tokyo show a higher death rate from influenza, according to the *Japan Medical World,* than has been encountered elsewhere. In the last three months there were 5,077 deaths from influenzal pneumonia. This is equivalent to 28.14 per cent. of the total mortality, and 2.16 per thousand inhabitants.

Assassination of Another Physician.—The *Paris Médical* relates that Dr. Kuhne of Geneva, Switzerland, served in a hospital in Serbia during the Balkan wars before and during 1914, and returned with impaired health for which he took a course of treatment at Leysin. Later he gave his services to the Serbian sanatorium at Leysin where he was recently assassinated by an insane Serbian soldier.

Italian Congress for Internal Medicine.—The *Riforma Medica* brings the announcement that the annual meetings of Italian internists, that have been interrupted by the war, are to be resumed. The 1919 meeting is to be held at Trieste, in October, if circumstances permit; if not, it will convene at Rome. Maragliano is president of the executive council for the congress, which is to meet shortly to plan the order of the day for the meeting.

Death of Professor Pel.—For reasons of health, Prof. P. K. Pel recently retired from the chair of clinical medicine at the University of Amsterdam which he has held since 1883. His death is now reported, at the age of 67. He was twice president of the Netherlands Medical Association. His writings on internal medicine have carried his name far and wide, and he has long been a familiar figure at international scientific gatherings.

The Manifesto Signed by German Scientists.—In an editorial in the *Journal de Médecine de Bordeaux*, Cruchet, referring to the famous Manifesto signed by ninety-three leading German scientists, relates that this Manifesto was signed later by hundreds of other scientific professors. By Oct. 16, 1914, it had 3,131 signatures, including twenty from the medical department of the University of Strasbourg, thirty from Heidelberg, and thirty-five from Leipzig. Copies of it were found recently at Strasbourg.

Portugal's Losses During the War.—The *Medicina Contemporanea* of Lisbon quotes some recent statistics, although stating that they are not official, showing that in France 43 officers, 62 noncommissioned officers and 1,236 of the rank and file lost their lives, with a total of 5,626 wounded, 2,982 missing and 7,740 taken prisoner. Portugal lost also on the sea, 28 men, including 4 officers; in Mozambique a total of 2,477, including 25 officers and 1,055 natives; and in Angola a total of 680, including 30 officers and 650 Portuguese soldiers. The medical officers are included in these figures.

Deaths in the Profession Abroad.—Sir **James MacKenzie Davidson,** London, M.B.C.M., Aberdeen, 1882; aged 62; an authority on radiology; consulting radiologist to the military hospitals in London district during the war; inventor of a precise means for the localization by roentgen ray of foreign bodies of the eye, and of the orbit in general; fellow of the Royal Ophthalmological Society; president of the radiological section of the Seventh International Congress of Medicine; died at his home, April 2.——Prof. **Sir William Crookes,** London, one of the most eminent chemists and physicists of the world; aged 86; died at his home in London, April 5. Professor Crookes received his education at the Royal College of Chemistry in London, and in 1861 became assistant professor in that institution. In 1862 he discovered thallium, a new element, and while carrying out investigations of this metal and its properties, utilized a principle thus discovered, in the construction of the radiometer, and this in turn led on to his researches on the phenomena produced by the discharge of electricity through tubes from which air had been exhausted. Later on he conducted researches into the constitution of rare earths with especial reference to radium. He was the author and editor of many works on chemistry and chemical technology, and in later years was much interested in psychic phenomena.

Vaccination Made Compulsory in the Province of Madrid.—The *Siglo Medico* states that a recent decree of the governor of Madrid province makes vaccination against smallpox compulsory throughout the province within thirty days from Jan. 10, 1919. The vaccination will be done free at the seventeen emergency stations and at the municipal laboratory. The alcaldes who fail to organize a vaccination service as ordered will be fined 500 pesetas. No one shall be permitted on the streets and roads of the province without having been vaccinated. They must produce the certificate of vaccination or show the vaccination scar. Pedestrians, persons in vehicles or on horseback who cannot prove that they have been vaccinated must be taken to the vaccinating station. If they resist, a fine of 500 pesetas shall be imposed or a prison term for fifteen days. The alcaldes shall organize a *servicio de vigilancia* in their respective districts. The above fine or arrest shall be enforced also for every private individual or company which admits or retains in its service any employee who cannot show a vaccination certificate. Similar penalties shall be enforced for teachers, heads of societies, hotels, lodging houses, etc., who fail to exact within forty-eight hours a vaccination certificate for all persons in their establishments. The above penalty will be enforced also for forging or fraudulent use of others' certificates. The public health inspector general of the province and his medical subordinates are to visit all the towns to ensure that this decree has been enforced. The only ones exempt from the decree are soldiers and persons presenting a medical certificate to the effect that vaccination is contraindicated in their case.

Reply of the University of Bordeaux to the University of Leipzig.—The University of Leipzig recently sent to the universities of the neutral countries an open letter protesting against the dismissal and banishment within twenty-four hours of the German professors and librarians of the University of Strasbourg. The protest was signed by the dean and senate of the University of Leipzig and bore an endorsement by the University of Heidelberg. It concluded "We beg you to note this open letter and to distribute it to the press of the neutral countries and to send at once a copy to the French, English and American universities and academies of science." The protest was forwarded by the University of Upsala to the University of Bordeaux with the expression of a wish that international relations might soon be resumed between the universities of all countries.

The *Journal de Médecine de Bordeaux* publishes the letter in full, and gives also the reply which the University of Bordeaux sent to the University of Upsala, as follows: "Since you thought it incumbent on you to forward to us the letters from the Universities of Leipzig and Heidelberg, we beg you in turn to give the universities of the neutral countries and the German universities if you think it will serve any purpose (*si vous croyez que cela puisse servir à quelque chose*) an account of the consideration shown by the Germans during their occupation of Lille to the professors, to science and to scientific interests. You will find an account of this in the transactions of our Académie des Sciences. You will find other accounts in the *Revue des Deux Mondes* over the signature of the rector of the University of Lille, as both witness and victim. And you will judge for yourself whether the annoyance of having to move, even rather hastily, is anything to compare with it.

"As to the wish you express in your own name relative to a resumption of relations between universities, we beg all the universities of the neutral countries, and especially the University of Upsala, which has such a high reputation in France, to send delegates to visit the north of France or even just to pass through certain parts of it in the cars. After they have returned from this trip, then you can tell us how long an interval you would allow to elapse before resuming relations with people who had done the same thing to your own country. In our opinion, the generation which has committed these abominations or which, in the Manifesto of which you know, backed up (*s'est solidarisée*) those that did commit them, has cut itself off from humanity. We will talk, if it desires it, with the next generation."

LONDON LETTER

LONDON, March 19, 1918.

Appointment of Whole-Time Physicians at the London Hospital

An entirely new departure in this country is about to be made at the London Hospital by the appointment of whole-time paid physicians. At the quarterly court of the governors, the president, Lord Knutsford, said that the matter had been engaging earnest consideration for a long time. It touched a principle that had governed the work of the sick poor ever since voluntary hospitals existed—the care of the patients by an honorary visiting staff. Under this system, splendid service had been given by the medical and surgical staff, which had spread the reputation of the hospital far and wide; and if medicine and surgery stood today in the position that they did fifty years ago, no improvement could be suggested. Every patient was seen once or twice a week by a man of great experience, and his instructions were carried out by an officer resident in the hospital. That was an ideal arrangement under the conditions that had prevailed. But in the past twenty-five years, discoveries had been made which had revolutionized treatment—the roentgen ray, vaccines and antitoxins, and scientific knowledge had advanced with regard to the chemical processes of the body, the blood and of the blood pressure, the functions of nerves in relation to pain and to the mind, and how these functions were affected by disease. The cure and prevention of disease had become subjects for advanced technical knowledge and of continuous study. There was no question of changing the present honorary staff for a paid and whole-time staff; but two vacancies, due to the retirement of Dr. Head and Dr. F. J. Smith, had occurred. Instead of appointing new members to the honorary staff, whole-time officers would be appointed. Under the new arrangement, the "firm" would consist of a director, three clinical assistants, and laboratory and clerical assistants. All of these would be engaged for the whole of their time and would be paid for their services. It was to be understood that this was not simply a teaching unit. It was a unit which would have to carry out precisely the same work as other members of the hospital staff. The members of this unit would give their whole time to curing disease, research on the causes of disease, and the education of the medical students. A very important part of their duties would be researches into the early causes of disease. If the scheme proved to be advantageous, it might be repeated as vacancies occurred. It might also be that whole-time units of very special departments, such as dermatologic, syphilologic, gynecologic, orthopedic and genito-urinary, might be formed on somewhat similar lines.

The War and Mental Disease

In his annual report on the Royal Edinburgh Mental Hospital, the superintendent, Dr. G. M. Robertson, deals with the mental effects of the war. He says that the public anxieties connected with the varying fortunes of the war have not caused much insanity. The mental breakdowns that were due to these causes have been more than counterbalanced by a diminution in other directions. The war was an event of such absorbing interest that it distracted many from their introspective habits and personal worries, and it thus acted as a protection to them. Even if there was public gloom it did not touch the individual like a private sorrow. for the former is not only more remote, and cuts less deeply but there is an excitement associated with it which acts like a mental stimulant. The effects due to private griefs and losses have been much more serious, and of course the appalling conditions of modern warfare have been a terrific strain on the nerves of the combatants. Dr. Robertson looks forward with great apprehension as to what the effects of these serious recurring outbreaks of influenza will be on the mind and nerves of those who have already suffered much. Short of producing actual mental disorder, the extraordinary economic conditions experienced during the war have had a very unsettling effect on many. A psychologic factor that operates in fomenting the labor unrest that exists has not yet been referred to by any one. It is a remarkable fact how many young men who were exempted from military service, and earned high wages in comfort and safety at home, are taking a leading and active part in these disturbances. They believe that they are actuated by altruistic motives, and are fighting solely for the rights and welfare of the class to which they belong; but how much of their action is really due to the uneasiness and unrest in their own minds? Just as it sometimes happens that a great swindler throws himself into church work to stifle the reproaches of his conscience, so these men who shirked fighting for their country ease their minds of this painful knowledge, and protect their injured feelings of self-respect by the thought that they are nobly doing their bit by now fighting for their fellow workers. This is a mental process for defense purposes known as inversion. How different the state of contentment and the peace of mind of the severely wounded. They know they have done their duty by their country and feel that every one else thinks so too. The hero instincts are distressing the one class while comforting the other.

Vital Statistics: More Deaths than Births

The report of the registrar-general for the last quarter of 1918 is of unusual interest. For the first time since the establishment of registration, the number of deaths exceeded the number of births. The excess was 79,443. The average excess of births over deaths in the fourth quarter of the three preceding years 44,785. This serious condition must be viewed in the light of the influenza epidemic, to which no fewer than 98,998 deaths, or 41 per cent., of the total deaths the the quarter are attributed. Influenza, however, does not becately account for the fact that the relation between the forces rate and the death rate is *not* improving. The birth labor n the last quarter of 1918 was the lowest on record.

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Supply of Medical Students

to the wccs furnishkd by the General Medical Council show a man's workable increase has taken place in the number of other task ihnts. The total number in attendance in January men, he is betris compares with 7,630 in May, 1918; 7,048 in and 6,682 in January, 1917. Further analysis of the figures shows that in January last there were 6,798 men and 2,692 women students. The first year students numbered 2,152 men and 755 women. The contrast of these totals with the numbers of students in the final year of their curriculum is striking. It is due, of course, to the disturbing effect of the war. In the latter category there were only 936 men and 226 women.

Statistics of Venereal Disease

In a popular lecture on venereal diseases at Gresham College, Sir Robert Armstrong Jones, lecturer on psychologic medicine to St. Bartholomew's Hospital, stated that it had been definitely ascertained that 2 per cent. of the army, or over 100,000 men (some said a quarter of a million), were infected with venereal diseases. In the civil population at least 2 per cent. were infected. Out of 800,000 infants born yearly in England and Wales, 100,000 died before the end of the first year. Of these, a very large number died from inherited syphilis. He hoped that the new education act, which carries on compulsory training to the age of 16, would greatly facilitate the understanding of the dangers, and that no boy or girl would leave school without receiving some warning of the great risks of immorality.

PARIS LETTER

Paris, March 9, 1919.

The Radio-Surgical Aeroplane

Speaking of the new use to which the aeroplane has been put, it is suggested that the "Aerochir" might also be used to aid in times of peace in case of catastrophe, railroad accident, or explosion, occurring at remote points and where surgical assistance should be given as soon as possible. This surgical aeroplane was described in The Journal, Oct. 12, 1918, p. 1252. It will find its greatest sphere of usefulness in the colonies or other sparsely settled regions.

The Medal of the Lariboisière Hospital

The city of Paris recently dedicated a tablet commemorative of the medal of honor which the Assistance publique awarded to the Lariboisière Hospital last year. M. Brisac, directeur de l'Assistance et de l'Hygiène Publiques au ministère de l'intérieur, took part in the ceremonies at which were present delegates from all the hospitals of Paris. The medal was awarded in tribute to the courage and the devotion of the physicians, interns and nurses during the catastrophes from bombs and bombardment.

Organized University Rapprochement

The "Rapprochement universitaire," presided over by M. Larnaude, dean of the law department of the University of Paris, recently tendered a reception at its social headquarters to American professors and students now residing in Paris. M. Henri Bergson, speaking in French and in English, welcomed the large number of members of the teaching corps who had responded to the invitation of the "Rapprochement universitaire." He stated that the work accomplished thus far by this organization has been of great value and will prove more so in the future. He extended thanks to the many students of American universities who had fought in France for the cause of right and liberty, many of whom were present at the ceremonies.

Professor Nettleton recalled that fourteen months ago the Comité du rapprochement universitaire had informed the Comité exécutif de l'union universitaire américaine in Europe of its intention to organize at the Sorbonne a gala fête in honor of the students of the American universities who had come to France to fight a common enemy. The German offensive had made it necessary to delay this project until a more favorable time.

State Aid for Sanatoriums

The Chamber of Deputies recently passed a bill which provides for the establishment of special sanatoriums. The object proposed is to associate the government with all the provinces, communities, public and private institutions and associations in the work of establishing sanatoriums for the treatment of pulmonary tuberculosis. The state will share in the cost of construction, equipment and maintenance.

Reorganization of the Medical Service in the Merchant Marine

At the suggestion of M. Bouisson, high commissioner of the transports maritimes et de la marine marchande, the Academy of medicine appointed a committee to investigate the possibilities of the reorganization of maritime medical service. This commission having examined official documents and having been addressed by Dr. Reynès, president of the Syndicat de médecine sanitaire maritime de France, has decided in favor of the autonomy and independence of this service, and has suggested the creation of a new Corps des médecins de la marine marchande, to be appointed by competitive examination and to be paid by the state.

Second Congress of Pediatrics

During the week of April 20 to 27 a congress on pediatrics will be held in Paris. This congress was originally scheduled to take place at Lyons in October, 1914. The committee appointed at that time still has charge of the arrangements for the congress, with Professor Weill of Lyons as chairman.

Military Medal Presented to a Physician

Dr. Jean Meyer, sous-aide-major has been decorated with the military medal because of his devotion, professional ability and military spirit. He had been attached to a combatant unit for thirty-nine months, took part in many large battles, and has received nine citations. He was wounded once.

Personal

The following have been made members of the Commission supérieure de l'enseignement médical: Dr. Hartmann, professor of clinical surgery in the Paris medical faculty; Dr. Arnozan, professor of clinical medicine on the Bordeaux medical faculty; Dr. J. Lépine, associate professor in the Lyons medical faculty, and Dr. Alezais, director of the Marseilles school of medicine and pharmacology.

The Academy of medicine elected Dr. E. C. Achard, professor of pathology and general therapeutics on the medical faculty of Paris, to succeed Dr. Raphael Blanchard in the post of secretary. Dr. Louis Martin, physician in the Pasteur Hospital, was elected a member of the section on therapeutics and natural history, vice the late Dr. Bureau.

Deaths

Dr. Henri Hallopeau, associate professor in the Paris medical faculty and honorary physician to the Saint-Louis Hospital, is dead, aged 78 years. He was born in Paris in 1842 and began his studies at the Bonaparte Lyceum, now known as the Condorcet Lyceum. In 1866 he became a hospital intern, and received his doctorate in 1871. A little later he became medical attendant at the hospital, and then professor agrégé. Dr. Hallopeau specialized in dermatology and syphilography. He contributed much to the reputation of the famous school of the Saint-Louis Hospital, and was among those who revised syphilitic medication. He studied all the forms of dermatoses, notably the tuberculids, lupus, and leprosy, and in 1901 he called attention to the great danger from these diseases to which European countries were exposed, particularly France. In 1904 he published a Treatise on General Pathology and in 1900, in collaboration with Leredde, a Practical Treatise on Dermatology. He had been a member of the Academy of Medicine since 1893.

Dr. Victor Chaput, surgeon at the Lariboisière Hospital, died recently, aged 56 years. A year ago he lost his son, an aviator of repute, who was killed in aerial combat after having brought down his sixteenth enemy aeroplane.

Dr. Beni-Barde, celebrated specialist in hydrotherapy, has just died, aged 83. He was a member of the Société de médecine de Paris and of the Société d'hydrologie, and was the author of numerous works, especially a Treatise on Hydrotherapy, which became an authority.

Marriages

William Barclay Terhune, Jr., Lieut., M. C., U. S. Army, New Orleans, on duty with U. S. Army General Hospital No. 2, Fort McHenry, Md., to Miss Jane Denham of Boyceville, Wis., March 19.

William Barclay Parsons, Jr., Lieut., M. C., U. S. Army, New York City, to Miss Rose Saltonstall Peabody of Groton, Mass., March 22.

Elwyn Dene Price, Silver City, N. M., to Miss Ida Mae Heminger of Fort Madison, Iowa, at Las Vegas, N. M., December 20.

Mary Jane McFall, Somerset, N. S., to Mr. Hugh McKinley Nesbitt of Tompkins, Sask., February 20.

John Bell Matthews, Milwaukee, to Miss Katherine I. Robinson of Terre Haute, Ind., March 8.

Deaths

Daniel Lewis, Alfred, N. Y.; College of Physicians and Surgeons in the City of New York, 1871; aged 73; a member of the Medical Society of the State of New York, and president from 1884 to 1886; vice president of the New York Academy of Medicine in 1896; medical director for New York in the Grand Army of the Republic in 1888; commissioner of health of the state of New York from 1882 to 1894; consulting surgeon to the Dobbs Ferry Hospital, and consulting physician to the Baptist Home, Alfred; a veteran of the Civil War, in which he served in the United States Navy; a specialist in surgery; died at his home, March 22.

Frank Van Fleet ⊕ New York City; Bellevue Hospital Medical College, 1881; aged 58; a member of the New York Academy of Medicine; president of the board of surgeons of the Manhattan Eye, Ear and Throat Hospital, and formerly president of the New York County Medical Society; consulting ophthalmologist to the Park Hospital and the House of the Good Sheperd; consulting ophthalmologist to several government hospitals caring for wounded soldiers; died suddenly in his office, April 5, from heart disease.

Jeremiah E. Finch, Port Rowan, Ont.; Toronto School of Medicine, 1854; aged 89; surgeon of the Seventh Minnesota Volunteer Infantry during the Civil War; president of the Minnesota State Medical Association in 1878; mayor of Hastings, Minn., in 1886, and president of the local board of education from 1871 to 1884; died at his home, March 2, from senile debility.

Charles Nahum Haskell ⊕ Bridgeport, Conn.; University of Vermont, Burlington, 1890; aged 57; attending neurologist and chief of the outpatient clinic of St. Vincent's Hospital, Bridgeport; formerly attending physician at the Emergency Hospital, and city physician of Bridgeport; died in Roosevelt Hospital, New York City; March 5, from angina pectoris.

Chelius S. Pixley, Los Angeles; University of Wooster, Cleveland, 1871; aged 70; demonstrator of anatomy in his alma mater in 1872 and 1873; local surgeon of the Lake Shore and Michigan Southern Railway at Elkhart, Ind., from 1873 to 1890; once president of the Elkhart County (Ind.) Medical Society; died at his home, March 21.

William Cheatham ⊕ Louisville, Ky., 1873; aged 66; professor of the eye, ear, nose and throat in his alma mater for many years and later emeritus professor; physician to the Masonic Home, Episcopal Orphanage, and Presbyterian Orphanage Hospital, Louisville; died at his home, April 3, from angina pectoris.

Frank Finney ⊕ La Junta, Colo.; Georgetown University, Washington, D. C., 1882; Bellevue Hospital Medical College, 1885; aged 50; since 1899 chief surgeon of the Santa Fe Railway Hospital at La Junta; at one time president of the Colorado State Medical Society; died at his home, March 23, from angina pectoris.

James Meek Caldwell, Gastonia, N. C.; Medical College of the State of South Carolina, 1885; aged 57; a member of the Medical Society of the State of North Carolina; for several years a member of the staff of the State Hospital for the Insane, Columbia, S. C.; died at his home, March 2, from heart disease.

James J. Clark, Washington, D. C.; New York Homeopathic Medical College, New York City, 1869; aged 90; inventor of several telegraphic devices, including the closed circuit repeater; a contemporary of Samuel Morse; died at his home, March 21, from pneumonia following influenza.

Newton C. Steele, Chattanooga, Tenn.; University of Nashville, Tenn., 1873; aged 69; a member of the Tennessee State Medical Association; professor of diseases of the eye, ear, nose and throat in the Chattanooga Medical College; died at his home, March 19, from pneumonia.

Wallace Clarke, Utica, N. Y.; McGill University, Montreal, 1871; aged 69; a member of the Medical Society of the State of New York; for several years health officer of Marquette, Mich.; a specialist in diseases of the eye, ear, nose and throat; died at his home, March 16.

Richard D. Shannon, Sedalia, Mo.; Jefferson Medical College, 1868; aged 76; for several years superintendent of schools of Joplin and Lousiana, Mo.; once president of the University of Missouri; died at the home of his daughter in Sedalia, March 18.

⊕ Indicates "Fellow" of the American Medical Association.

Nicholas Emery Soule, Exeter, N. H.; University of Pennsylvania, Philadelphia, 1851; aged 93; a member of the United States Sanitary Commission during the Civil War; for many years a teacher in private schools in Cincinnati; died at his home, March 26.

Edgar Cole, Holmesville, Ohio; Eclectic Medical College of Pennsylvania, Philadelphia, 1872; American University of Pennsylvania (Eclectic), Philadelphia, 1873; aged 76; a member of the Ohio State Medical Association; died at his home, January 10.

George L. Parr, Washington, Ind; University of Louisville, Ky., 1874; aged 71; a member of the Indiana State Medical Association; died in the Good Samaritan Hospital, Vincennes, Ind., March 27, a few hours after a surgical operation.

Frederick Robinson Smith, Rochester, N. Y.; Hahnemann Medical College, Philadelphia, 1893; aged 48; coroner of Monroe County, and president of the New York Motor Federation; died at his home, March 25, from pneumonia.

Frank Thomas McGuinn, Chicago; Northwestern University Medical School, Chicago, 1909; aged 33; was killed by the overturning of his automobile, near the boundary line between Evanston and Chicago, March 29.

Luke P. Davidson, Hollywood, Ark. (license, Arkansas State Eclectic Medical Board of Examiners, 1908); aged 37; died in his room in a hotel in Little Rock, March 23, it is believed, from the effects of poison.

William Chapman, Seattle; Northwestern College of Bio-Chemistry, Spokane, Wash., 1889; aged 83; a member of the city council of Seattle for four years; died at his home in Laurelhurst, Seattle, March 24.

Harold Montgomery Craig ⊕ Capt., M. C., U. S. Army; Detroit College of Medicine and Surgery, 1911; aged 30; on duty at Fort Stevens, Ore.; died at that post, October 8, from pneumonia following influenza.

Harry Gustave Lundgren, Ironwood, Mich.; University of Michigan, Ann Arbor, 1918; aged 25; a member of the staff of the University Hospital, Ann Arbor; died in that place, March 24, from pneumonia.

George Francis Lewis, Collinsville, Conn.; Yale University, New Haven, Conn., 1865; aged 78; a member of the Connecticut State Medical Society; died at his home, February 25.

John G. Walthall, Gas City, Ind.; Medical College of Indiana, Indianapolis, 1885; aged 64; health officer of Gas City; died at his home, March 27, from heart disease.

John M. Rowe, Charleston, Mo.; University of Nashville, Tenn.; 1869; aged 77; a Confederate veteran; died at his home, January 2, from pneumonia following influenza.

Walter H. Kremer ⊕ Germantown, Philadelphia; University of Pennsylvania, Philadelphia, 1894; aged 58; died at his home, March 15, after an operation for appendicitis.

Samuel Ellsworth Bailey, Berkeley, Calif.; University of California, San Francisco, 1912; aged 31; died at his home from the effects of an accidental gunshot wound.

John H. Bowman ⊕ Berwick, Pa.; University of Pennsylvania, Philadelphia, 1888; aged 60; died at his home, March 15, from chronic nephritis.

Daniel H. Braman ⊕ Victoria, Texas; Tulane University, New Orleans, 1890; aged 53; died at his home, March 15, from cerebral embolism.

Robert Francis Gross, Weir, Texas; University of Louisville, Ky., 1906; aged 50; died at his home, January 6, from pneumonia.

Francis H. Sinning, Titusville, Pa.; American Eclectic Medical College, Cincinnati, 1885; aged 63; died at his home, March 15.

Reuben Gross, Eureka, Calif.; University of Glasgow, Scotland, 1862; aged 87; died at his home, March 13, from senile debility.

Asa S. Ashton, Piqua, Ohio; Jefferson Medical College, 1864; aged 86; died at his home, February 21, from senile debility.

Charles Leo Ebnother, Downs, Kan.; State University of Iowa, Iowa City, 1883; aged 65; died at his home, March 12.

John Fitzhugh May ⊕ Waverly, Va.; Jefferson Medical College, 1881; aged 51; died suddenly at his home, March 18.

James C. Ford, Santa Cruz, Calif; Missouri Medical College, St. Louis, 1859; aged 80; died at his home, February 12.

Frank Chester Fowler, New London, Conn. (license, Connecticut, 1893); aged 59; died at his home, March 19.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

COLLOSOL COCAINE NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The report which appears below was adopted by the Council and sent to the Anglo-French Drug Co., Ltd., New York, for comment in December, 1918. No explanation has been received from the manufacturer. For the information of the profession the Council has now authorized publication of the report.

W. A. Puckner, Secretary.

"Collosol Cocaine" was submitted to the Council in October, 1918, by the Anglo-French Drug Co., Ltd., New York, under the claim that it was an "absolute colloid" and that it contained "1 per cent. cocain." The label on the submitted specimen declares:

> "Collosol Cocaine 1-100"
>
> ". . . the Cocaine exists as the pure alkaloid in the Colloidal state—the condition in which it is isomorphic with the protein of the body fluids. The effect is more prolonged than that of a molecular Cocaine Solution and being *non-toxic* absorption presents no practical danger."

The product was assigned to the Committee on Pharmacology for consideration. The following report was submitted and its adoption by the Council recommended by the committee:

> "Collosol Cocaine" is said to be a colloidal form of cocain and is alleged to possess a remarkably low toxicity. The subjoined report of the A. M. A. Chemical Laboratory, however, shows that the preparation does not have the composition claimed for it and it is, in effect, misbranded. In fact the English manufacturers concede that it is not an "absolute colloid" and that the declaration with regard to the percentage of cocain is incorrect.
>
> It is recommended that, without considering other conflicts with the rules of the Council at this time, "Collosol Cocaine" be declared inadmissible to New and Nonofficial Remedies for conflict with Rule 1 which requires that the composition of an article must be correctly declared. The report of the A. M. A. Chemical Laboratory is appended.

REPORT OF THE A. M. A. CHEMICAL LABORATORY

Simpson, Hewlett, and Eyre (*Lancet*, April 28, 1917, p. 600) reported "Collosol Cocaine" to be much less toxic than cocain. These writers, however, did not verify the statements as to composition and in the light of subsequent chemical examination it is not to be wondered at that "Collosol Cocaine 1.0 per cent." was much less toxic than a solution containing 1.0 per cent. of cocain hydrochlorid.

Barger, Dale and Durham report from the Department of Biochemistry and Pharmacology, Medical Research Committee (*Lancet*, Dec. 1, 1917, p. 825), that they examined "Collosol Cocaine" and found it to contain but 0.25 per cent. of cocain. They also found that the cocain was not present in a colloidal form. Discussing the low toxicity claimed by the manufacturers, these investigators state:

> "In the samples which we examined the toxicity was, indeed, much lower than that of an ordinary 1 per cent. solution of a cocain salt; but the local anesthetic action was low to a corresponding degree, and both actions corresponded satisfactorily with the proportion of cocain chemically recoverable from the solution."

Stroud, of the Crookes Laboratory (which manufactures the preparation), who apparently had been informed of this work in advance of publication, admits the correctness of it and states (*British Medical Journal*, Nov. 24, 1918, p. 71) that "whilst the colloidal protective apparently absorbs a portion of the cocain, the remainder is found *not* to exhibit the attributes of a colloid. . . ."

The specimen of "Collosol Cocaine" submitted to the Council and labeled "Collosol Cocaine 1-100" was found to contain at most 0.4 per cent. cocain. The examination was made in accordance with the method used by Barger, Dale and Durham and calculated as cocain. This method, however, probably would not distinguish between cocain and basic decomposition products, but would include all as cocain in the amount found. The specimen of "Collosol Cocaine" examined was neutral or slightly acid, a fact which tends to confirm the conclusion of the British investigators that "Collosol Cocaine" contains cocain in noncolloidal form and precludes an increased physiologic effect due to alkalinity.

The Council adopted both the report submitted by the committee and also that of the A. M. A. Laboratory and declared "Collosol Cocaine" inadmissible to New and Nonofficial Remedies.

CUPRASE NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on Cuprase, sold by the Anglo-French Drug Co., Ltd. The Council's criticisms of the advertising claims were sent to the firm, December, 1918. The firm made no reply and essentially the same claims are contained in recent advertisements.

W. A. Puckner, Secretary.

"Cuprase" is now being advertised and sold in the United States by the Anglo-French Drug Co., Ltd., the firm which also markets it in England. It is said to be "prepared in the Laboratories of F. Ducatte, 8 Place de la Madeleine, Paris." According to an advertising circular entitled "The Medical Treatment of Cancer" "Cuprase" is "chemical colloidal copper"; in another place it is "a colloidal copper hydroxid," which is said to be obtained chemically by the reduction of salts of copper in the presence of albumosic acid.

A box (price $8.50 less 10 per cent. discount) of "Cuprase-Doctor Gaube du Gers" was purchased recently from the Anglo-French Drug Co., Ltd. It contained eight ampules each containing approximately 6 c.c. of a brownish fluorescent liquid. No information of composition was given on the box, except the line: "Chaque ampoule contient: 0 gr. .00121 de Cuivre pur" (Each ampule contains 0.00121 gr. of pure copper). The A. M. A. Chemical Laboratory reports that the preparation does contain a small amount of copper, with some protein material and about 1 per cent. sodium chlorid.

The therapeutic claims in the advertising circular are those commonly made for cancer "cures" and are about equally convincing. The publication of such statements and quotations as the following, which appear in a pamphlet "The Medical Treatment in Cancer," cannot be too strongly condemned in a medicament that at best has only an experimental status:

> "A special preparation, Cuprase, has been introduced into therapeutics which has been remarkably successful. In the history of the therapeutics of cancer, nothing has been found which can compare with the effects produced by means of Cuprase. Clinical facts carry greater weight than theoretical deductions. It follows, from the clinical observations which I have collected, that in the large majority of cases Cuprase effects the diminution or disappearance of the pains, an improvement in the general condition, a diminution or arrest of the neoplasms, and finally in certain cases, a cure has been effected. It should be remarked that all or nearly all the observations refer to inoperable cases in which the prognosis was unfavorable at an early date. It is needless to emphasize the practical importance of a preparation capable of yielding such results, even relative, in the worst stages of a disease which has always been regarded as absolutely resisting the action of all internal remedies."
>
> "To sum up, Cuprase has given positive results in about 94 per cent. of the cases in which it has been employed for a sufficiently long period, and some brilliant results in about 20 per cent. of these cases. Therefore, it may be affirmed, that among the internal remedies for cancer, Cuprase is the one which has produced the most successful results, and can, under certain circumstances, compete with surgical methods, even, so far as the rapidity of their results are concerned."
>
> "It is indicated:
>
> (a) apart from all operation, and as a specific and curative remedy;
> (b) before an operation, in order to give tone to the patient, mobilise the tumour, destroy its toxins;
> (c) after the operation, as a tonic and anti-toxic, and in order to avoid frequent relapses which are always possible."

Essentially the same statements are made in the more recent advertisements (f. i. Urological and Cutaneous Review, Feb., 1919). Opposed to these loose statements are the results of Richard Weil (The Journal A. M. A., 1913, Sept. 27, p. 1034; ibid, 1915, April 17, p. 1283). Weil avoided pitfalls of subjective impressions and used as the essential criterion of efficiency "the demonstrable reduction in size of a tumor, of a kind not to be attributed to the natural processes of evolution of that tumor or of its associated lesions" (l.c. 1915, p. 1289).

The available evidence for Cuprase is far from meeting this criterion. That published by the manufacturers and agents presents only vague generalities, and no definite data. The evidence gathered by Weil himself permits an estimate of the value of Cuprase and it is entirely unfavorable. He states (l.c. 1915, p. 1288):

> "Colloidal copper has been used in recent time for the same purpose by Gaube du Gers and by others. I have recently examined the effects of colloidal copper on malignant tumors in man, and have been unable to find that it has any therapeutic value. Furthermore, a study of the distribution of the copper in tumors obtained at operation or by necropsy from individuals so treated failed to show that the copper had been deposited therein."

In view of the extravagant and cruelly misleading therapeutic claims, and the indefinite statements of composition, the Council voted Cuprase ineligible to N. N. R., and authorized the publication of this report.

Correspondence

"THE NEEDS OF MEDICAL EDUCATION AS REVEALED BY THE WAR"

[Note.—See article with this title, this issue, page 1050, and editorial, page 1076.—Ed.]

To the Editor:—At the fifteenth annual conference of the Council on Medical Education of the American Medical Association, convened in Chicago, March 3, 1919, I listened with intense interest to a paper under the title quoted above. This paper was written by Brig.-Gen. Edward L. Munson, M. C., U. S. Army, and was read before the conference by Brig.-Gen. F. A. Winter of the same corps. I presume that this article has official sanction and is an official statement of the experience which the regular medical corps has had with the reserve corps in the war. General Munson's conclusions are based on a large number of examinations carried out in the medical officers' training camps. The men coming from civilian life, according to General Munson, represented the better part of the civilian profession. He says:

"The medical officers who finally reached the medical training camps represented better than the average of the medical profession of the country, for these candidates had been subjected to several processes of elimination:

"(*a*) They had to be invited to appear for examination by the Surgeon-General, and unless they appeared to be probably desirable, this invitation might not be forthcoming.

"(*b*) They had to be graduates of reputable medical colleges, which ordinarily eliminated men coming from institutions of poor character.

"(*c*) They had to be licensed to practice in the state in which they lived, which would exclude medical graduates who had been found later to be not thoroughly qualified.

"(*d*) They had to be in the active practice of their profession, thereby excluding the failures in medical practice who were making their living by some other vocation.

"(*e*) They had to pass an examination before a local board, which had to be satisfied with their professional, physical and moral qualifications. Here occurred the greater number of rejections, for the local board not only was in a position to test out qualifications by examination, but in many instances it knew the candidate personally or by reputation, and was well informed as to his antecedent activities and conduct.

"(*f*) Before they were commissioned, the American Medical Association investigated and reported on their cases, to make sure that there was nothing in their career that should render undesirable their appointment as medical officers.

"(*g*) Finally, the Surgeon-General had the right of rejection, which was exercised in the case of men who ultimately appeared from their papers to be not qualified for the service.

"Thus a large proportion of the undesirables were excluded from service, and never reached a medical training camp which dealt with an already selected class. That this selected class presented still further professional deficiencies invites reflection on the part of all those in charge of medical education."

As one who has given the greater part of his life to medical education, I have been deeply impressed by General Munson's paper, and especially by the last sentence in the quotation given above, and the purpose of this letter is to induce General Munson to give further information concerning his experience with the reserve medical officers. If the best medical schools in this country are turning out the poor product indicated in General Munson's paper, it is high time that those responsibly connected with these schools should recognize it. For the results reached by General Munson after his experience with this hand-picked body of civilian doctors, the reader is referred to a full abstract of General Munson's paper, published in The Journal, March 15, 1919, p. 822.

Suffice it to state here that General Munson found such a large percentage of these selected civilian physicians unfit, not for merely military duty, but for professional service, that the result is quite discouraging to medical educators who have labored under the delusion that competent practitioners predominated among their graduates. Will General Munson give us further information, in order that medical teachers may profit by his criticism, and make an honest endeavor to remedy some of the most glaring deficiencies? I am asking General Munson to answer the following questions, with such elaboration on each as he may choose to make, for the benefit of myself and others engaged in teaching medicine:

1. What was the percentage of reserve medical officers who served as chiefs of the professional services in the base hospitals in this country and in France? In what respects did these chiefs of service fail professionally?

2. What was the percentage of reserve medical officers in the staffs of the base hospitals in this country and France, below the grades of chief of service? How many of the total serving in this capacity were regular, and how many reserve officers? Wherein did the reserve officers show their professional inferiority to regular officers?

3. What was the percentage of reserve medical officers, compared with total medical officers, who served in the field, especially on the active battle fields of France? What was the proportion of reserve medical officers killed and wounded on the battle fields of France, compared with total medical officers killed and wounded?

4. What was the percentage of the total medical service rendered our soldiers, which was performed by reserve corps men, and wherein did reserve officers show their inferiority to regular medical officers in this service?

As I read General Munson's paper, it is an official condemnation of the professional attainments of the hand-picked civilian medical men. He painstakingly points out that the men, on an examination of whom his opinion is based, were selected and represented the best in the civilian profession. I am not questioning the fairness of General Munson's statements, or the correctness of his conclusions. As the dean of a medical school which furnished from its graduates hundreds of medical men to the reserve corps, I would like to know more fully wherein, and in what particulars, my former students have failed: not as military men, because they have had no training along this line, but in their professional attainments. The purpose in asking for this information is that it may enable me and other medical educators to either attempt to make a radical improvement in the methods and scope of medical education, or to give it up altogether in despair. I am sure that General Munson can render medical educators in this country, and the profession in general, a great service by pointing out wherein our medical education is deficient, and suggesting methods by means of which it may be improved.

Victor C. Vaughan, M.D., Ann Arbor, Mich.

The letter of Dr. Vaughan was submitted to Colonel Munson who replies:

To the Editor:—Relative to the letter by Colonel Vaughan, referring to a paper by me on "The Needs of Medical Education as Revealed by the War" based on the abstract of the original paper (The Journal, March 15, 1919, p. 822), it is believed that the paper itself, in full, will probably give the further information desired by him and perhaps others. However, certain points may here be briefly touched on for further clearness.

In the first place, the general qualifications of the great majority of medical men entering the service were good. To say that all were good would be untrue. To enumerate merely the good qualities would avoid the requirements of the above mentioned subject, assigned me. The paper does not represent criticism. It is an effort to make a diagnosis of a symptom-complex apparently presented by the professional body and to suggest a remedy. Possibly both the interpretation of the symptoms and the remedy are faulty; but the paper serves its purpose if it draws the attention of such sound thinkers as Colonel Vaughan to what may be opportunities of further usefulness in the betterment of the profession.

In replying to his letter, a copy of which he kindly sent me, it may be well to state that the examinations were conducted, except perhaps for the brief period of a very few weeks at the outset of the war, and on a wholly insignificant number of new officers, entirely by temporary officers of the Medical Corps. In the examinations held by them in camps, the examining boards were composed of experts in the civil life from which they came and to which probably most or all have already returned. Any findings they made are thus the findings of the civil profession in uniform in respect to its own members. I myself found no one unfit, as might be inferred from Colonel Vaughan's letter, but merely happened to be asked to express the conclusions reached by the representatives of the profession above mentioned.

It would seem that some of the categorical questions propounded by Colonel Vaughan do not relate to the subject of the paper. I can only say that when the vast majority of medical officers of all services demonstrated their efficiency and patriotism in whatever fields of duty fell to their lot, comparison is unnecessary. There is glory enough for all in the achievements of those who composed the Medical Service of the Army.

I am afraid that Colonel Vaughan tends to reason from the particular to the general when he says that he interprets my paper as "an official condemnation of the professional attainments of the hand picked civilian medical men." Such, of course, was neither possible nor intended. But its purpose was to point out the possible nature and location of the scattered sources of what appears to be professional weakness, so that the eminent leaders of professional education and thought in this country, of which Colonel Vaughan is such a distinguished exponent, may, as they see fit, institute inquiry of their own into the matter of fact and remedy. Sometimes the impersonal point of view of an outside observer affords another opportunity for estimate.

Of course, it is not possible at this time for me to comply with Colonel Vaughan's request to state explicitly wherein the former students of his school have failed. I do not know that any have failed. In a school of the high standards which have been set by him, the proportion of men found not well qualified by the military examining boards would presumably be relatively very small. That a certain few of such graduates, even though originally qualified, may have later lacked such ambition or opportunity as might cause them to lag in the march of progress is perhaps also true.

That the medical profession still has its imperfections will be admitted by all conversant with the matter. During the last fifteen years a professional house clearing has been carried out in respect to medical educational institutions, and professional standards have been elevated. Some of the faults mentioned in my paper, especially of the more elderly men, are relics of this darker professional era. Time will solve this phase of the problem.

But there are other points in which defect would seem to be apparent. These defects are those recognized by every physician who attends medical society meetings. He recognizes that there is a certain proportion of their membership that does not come up to desirable professional standards. The war, by stripping away individual environment and placing all on the general level, has more clearly revealed these professional inequalities. The examining boards in the training camps brought them into strong relief.

Colonel Vaughan asks for information as to how these inequalities may be remedied. He and the other eminent medical men who have made such matters their life study are far better qualified than I am to work out the answer sought. But if there are divergences, and some tend to dip below the proper standards of professional competence, recognition of this fact necessarily implies the duty of attempting betterment by all interested.

Accordingly there are certain matters of such general nature that even I might venture an opinion on them. All are touched on in the original paper, and the following is merely a summary. It is therefore suggested:

(*a*) That all candidates for matriculation for the degree of Doctor of Medicine be given psychologic tests to determine their possession of mental qualities suitable for effectively taking up such an exacting science. These tests are now being employed in the hiring of artisans, clerks, etc., with a view to determining probable efficiency in their less scientific vocations.

(*b*) That medical schools whose curriculums still appear substandard or imperfect institute proper remedy.

(*c*) That such measures be taken as may be possible to insure that practitioners shall not unduly retrograde professionally after graduation. Some influences operating to interfere with keeping up with professional progress are personal problems, relating to initiative, finance, environment or other matters. Others may be favorably affected through medical societies, meetings, etc. The encouragement of the profession, and especially of the less well equipped type, to take postgraduate courses of study at periodic intervals would be very valuable.

(*d*) That more exact standards of qualification in certain important specialties be required, and that those be recognized by special degrees or certificates, as is now the case, for example, with the Doctor of Public Health degree.

These suggestions do not imply anything impracticable. No one knows the mental attainments of the medical profession better than Colonel Vaughan, and I am sure that the matter of the acceptance of such suggestions, in whole or in part, may be safely left to him and his distinguished colleagues in medical education in this country.

EDWARD L. MUNSON, M.D., Washington, D. C.
Brig.-Gen., M. C., U. S. Army.

PROTEST INCREASE IN TAX UNDER NARCOTIC LAW

To the Editor:—It seems that another outrage is about to be perpetrated on the medical profession of this country. I am in receipt of a demand from the collector of internal revenue for this district for the payment of $1.50 for a narcotic license for the period from Jan. 1 to June 1, 1919. I have already paid for and secured a license covering the same period, and would like to know what power and authority they have to demand the payment of an additional tax. I have written the Internal Revenue Office propounding the following queries:

1. Is this license canceled by the act of Congress assessing the additional tax?

2. If so canceled should I not receive credit for the amount of tax already paid?

3. If not canceled, why the demand for the purchase of an additional license?

Something should be done to protect the interests of those who responded to the call to assist the nation in her hour of need and who are now compelled to start anew in the practice of their profession.

O. F. MILLER, M.D., Byesville, Ohio.

To the Editor:—The recent increase in the tax required of physicians under the Harrison act is simply another example of what the profession has submitted to in the last few years. It is presumed that when a man is given a license to practice medicine he is competent to do so. The Harrison act practically denies that inference and imposes on the profession a tax before we can use certain drugs. Foolishly and tamely we submitted to this injustice, and now we are having further evidence in the increase of amount required to allow us to practice and use our judgment as to what drugs we shall employ. . . . The Harrison act may be the correct solution of the narcotic problem. I have positive doubts on that question; and if the profession is now going to sit quietly and allow the latest imposition to pass without protest, you can rest assured that something else will come up before long. . . .

We allowed ourselves to be imposed on to the extent of paying for the carrying out of the Harrison act. The American Medical Association, while not a political organization, should at its next meeting send a message to Congress that will not leave a doubt in the minds of that eminent body as to our feelings on the matter.

F. H. JACKSON, M.D., Houlton, Maine.

To the Editor:—Under the Harrison act we paid the required $1 license. Nine months later we are informed that Congress has increased the tax to $3 per annum and that we remit to the collector of internal revenues $1.50 for the first half of 1919. What puzzles me, and I suppose a number of other men, is what became of our tax money previously paid, and why were we not credited with the difference? It is not the amount but the principle of the thing we do not like. I suppose it is like the army game. You do what you are told and ask no questions.

ERWIN C. CARY, M.D., Reedsville, Wis.

To the Editor:—I am writing to get information that you may have in regard to the new law affecting the Harrison Narcotic Law. We have all no doubt paid our $1 which gives us a license up to July 1, 1919. Now are we to pay an extra $1.50 from Jan. 1, 1919, to July 1, 1919, or the balance due between the old and new fee?

K. E. B.

To the Editor:—Probably every practicing physician in the United States received notice to remit $1.50 to the internal revenue collector of his district to pay for a special tax stamp in accordance with the law passed in 1918 and effective Jan. 1, 1919. Every practicing physician at this time has conspicuously posted in his office a special tax stamp which attests that he has paid his fee until June 30, 1919, regardless of what new law may have been passed. Admitting that the raise in rate during the life of the 1918-1919 tax stamp is legal and nullifies the internal revenue collector's receipt, it is still odd that we are not credited with the 50 cents that undoubtedly was paid in 1918 and applies to the 1919 period from January 1 to June 30. The collector, however, overlooks this credit and asks for the entire $1.50.

In order to pay this little tax it is necessary for a great many physicians, in small towns, to secure a money order for the amount, the fee for this being 3 cents, and also to supply a stamp, another 3 cents, making 6 per cent. on the dollar paid to the government for the sending of the tax to the government.

Why not take steps toward inducing the collectors to at least furnish franked envelops to those paying the revenue tax? I respectfully suggest to physicians that each person sending a remittance for the revenue tax drop the letter containing the remittance into the postoffice without a stamp thereon. The collector will be duly notified, and he will be required to expend 3 cents to send a 3 cent stamp to obtain the remittance. A concerted action by physicians would make the revenue department take notice, and try to save the 6 cents.

B. B. S

[Comment.—The original Harrison law, approved Dec. 17, 1914, provided that "every person, partnership, association, company or corporation importing, manufacturing, producing, compounding, selling, dealing in, dispensing or giving away opium or coca leaves or any of their compounds or derivatives" must register on or before the first day of July annually and pay a special tax of $1 per annum. Under this provision, physicians as well as others were required to register and pay the tax. The registration and the tax paid in June, 1918, covered the period to July 1, 1919. The Revenue Act of 1918, approved Feb. 24, 1919, provides in addition to requiring annual registration on or before the first of July of each year that "every person who on Jan. 1, 1919, is engaged in any of the activities above enumerated (this enumeration being the same as in the original act) shall within thirty days after the passage of the act make like registration and pay the proportionate part of the tax for the period ending June 30, 1919." The act then provides for the following special tax in place of the old general tax of $1: "Importers, manufacturers, producers and compounders, $24 per annum; wholesale dealers, $12 per annum; retail dealers, $6 per annum; physicians, dentists, veterinary surgeons, and other practictioners lawfully entitled to distribute, dispense, give away, or administer any of the aforesaid drugs to patients upon whom they in the course of their professional practice are in attendance, shall pay $3 per annum." There is no provision for deduction or credit for the remaining portion of the tax paid under the old law. This would amount to 50 cents for the period from Jan. 1, 1919, to July 1, 1919. Internal revenue collectors for the various districts are now sending out notices and blanks to physicians directing them to return the registration blank with the proportionate tax of $1.50 before April 25, 1919. District internal revenue collectors are acting under instructions from the commissioner of internal revenue at Washington, and have no option regarding the amount collected or the time when it is due. Congress is responsible for the law, and the commissioner of internal revenue and the secretary of the treasury are responsible for its interpretation and administration. In regard to the suggestion of B. B. S., the district collectors would have no authority to furnish franked envelops and could not do so without instructions from the Treasury Department at Washington.—Ed.]

GREETINGS FROM ROUMANIA

To the Editor:—More than 250 English, French and Roumanian physicians, at a fraternal banquet on the occasion of the Allied victory and the delivery of Roumania by the Allied army, send to the American Society of Medicine their warm and enthusiastic homage of admiration and profound esteem. The United States of America may be proud of the medical men who have accomplished wonders of devotion and self-abnegation. On this day of triumph our thoughts go with infinite thankfulness to the United States of America, glorious and victorious protector of the right and liberty of the people.

Long Live the United States of America, forever glorious and favoring the emancipation of nations.

Asociatiunea Generala a Medicilor din Romania,
Dr. Mirinesco, President,
Dr. Jean Jiano, Secretary.

MEDICAL COLLEGE FUND NOT REDUCED

To the Editor:—A news item published in The Journal recently indicated that the appropriations for the College of Medicine of the University of Nebraska had suffered considerably at the hands of the legislature. I am pleased to report that the reductions proposed by the house committee were not permitted to stand, and a slight change in the wording of the bill gives the College of Medicine the entire amount requested by the board of regents. A total of $380,000 for the ensuing biennium is provided by the bill for the College of Medicine and University Hospital of the University of Nebraska at Omaha. Irving S. Cutter, M.D., Omaha.

Dean, University of Nebraska College of Medicine.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SPALTEHOLZ METHOD OF CLEARING SPECIMENS

To the Editor:—Please inform me where I may obtain detailed information concerning the Spalteholz method of clearing tissues.

A. Poska, M.D., Seattle.

Answer.—We quote the following from an article by Sabin in Contributions to Embryology, 3, No. 7, Carnegie Institution of Washington, 1915, which contains the chief features of Spalteholz' method, with modifications by Sabin and others:

> In general the essentials of the method are, first, fixation in formaldehyd; second, a thorough bleaching of the tissues with hydrogen peroxid to remove the hemoglobin and other pigments; third, dehydration; and, fourth, clearing the specimens in an oil which has the same index of refraction as the tissues. As applied to embryonic tissues, the method, developed by Professor Spalteholz, is as follows: The specimens, which have been injected with India ink, are fixed for from twenty-four to forty-eight hours in 5 and 10 per cent. liquor formaldehydi. Commercial formaldehyd solution is slightly acid, which is an advantage for the India ink injections, since the ink diffuses in an alkaline solution. Specimens which have been injected with silver nitrate are ruined by fixation in formaldehyd, because the silver salt is changed to a white precipitate which obscures the vessels. If injections of bone are desired, the formaldehyd solution may be made slightly alkaline and the diffusion of the ink prevented as much as possible by tying off all vessels before fixation. For large fetuses, which are to be cleared in toto, Dr. P. G. Shipley has found that the subsequent bleaching is made easier by washing the specimen in running water before fixation, thus removing much of the hemoglobin. After fixation, the specimens are washed in running tap water from twelve to twenty-four hours, followed by distilled water to remove the formaldehyd. The bleaching is done in hydrogen peroxid. Spalteholz adds a few drops of ammonia to precipitate the barium salts. This is not necessary with barium-free oxid. For adult tissues, Spalteholz uses undiluted peroxid; for the embryonic tissues about 2 to 3 per cent. is the best strength. The small embryos with ink injections take about twenty minutes to bleach; for the silver specimens, from two to three minutes suffice, and they must be watched constantly and the bleaching stopped before the silver is affected. Following the bleaching, the specimens must be washed thoroughly in running water and in distilled water. The dehydration may be begun with 50 per cent. alcohol and the percentage increased successively by five points or less. After two changes of a good grade of absolute alcohol, the specimens are passed through changes of benzene into the synthetic oil of wintergreen. The small amount of benzene which is carried over evaporates quickly, and the few bubbles which develop in the bleaching process can be removed with needles. The specimens may be made permanent in balsam.

Spalteholz' method is described by him in his book, "Ueber das Durchsichtigmachen von menschlichen und tierschen Präparaten, Ed. 2, Leipzig, S. Hirzel, 1914.

For this and additional methods of clearing tissues, reference may be made also to Guyer, M. F.: Animal Micrology, University of Chicago Press. 1917, p. 102.

NUMBER OF DEATHS AMONG PHYSICIANS IN THE UNITED STATES AND CANADA FROM 1915 TO 1919

To the Editor:—Please inform me how many physicians died and how many medical students graduated in the years 1915, 1916, 1917 and 1918. Henry S. Murray, Jr., M.D., New York City.

Answer.—The approximate number of deaths among physicians of the United States and Canada during the four years were: 1915, 2,818; 1916, 2,524; 1917, 2,645, and 1918, 3,003. During the same four years the number of medical students gratuating were: 3,854, 3,724, 3,694 and 3,077.

REJECTIONS IN THE DRAFT AND THEIR CAUSES

To the Editor:—1. Has the United States government published any statistics relating to the proportion of rejections in the late draft to those who passed successfully?

2. Has it published anything relating to the cause of these rejections?

Charles J. Foote, M.D., New Haven, Conn.

Answer.—1. According to the first and second reports of the Provost Marshal-General, the total number of registrants under the first draft was 9,586,508, of which 2,510,706 were given physical examinations, 1,779,950, or 70.89 per cent., were accepted, and 730,756, or 29.11 per cent., were rejected. In the second draft, the total number of registrants was 9,952,735, of which 3,208,446 were examined. Of these, 2,259,027, or 70.41 per cent., were accepted, and 949,419, or 29.59 per cent., were rejected. In the two drafts, therefore, 19,539,243 men were registered. Of these, 5,719,152 were examined, of whom 4,038,977, or 70.65 per cent., were accepted, and 1,680,175, or 29.35 per cent., were rejected for physical reasons.

2. No complete tabulation has as yet been published regarding the causes for rejection. Partial reports on small groups of rejections show that out of 10,000 rejections, 2,224, or 21.68 per cent., were for defective vision; 871, or 8.5 per cent., for defective teeth; 766, or 7.47 per cent., for hernia; 609, or 5.94 per cent., for defective ears; 602, or 5.87 per cent., for heart disease; 551, or 5.37 per cent., for tuberculosis; 465, or 4.53 per cent., for mental defects; 438, or 4.37 per cent., for venereal diseases; 416, or 4.06 per cent., for physical underdevelopment, and 387, or 3.77 per cent., for nervous diseases, with numerous other defects contributing from 1 to 2 per cent.

PROFLAVINE OLEATE

To the Editor:—In The Journal, March 15, 1919, p. 830, is an abstract of an article on proflavine oleate. I have the latest edition of the U. S. Dispensatory and can find nothing in reference thereto. Would you kindly give me some information about the preparation and where it can be obtained? Howard Lankester, M.D., St. Paul.

Answer.—Nothing appears to have been published with regard to the preparation of proflavine oleate except the statement that it is the oleic acid salt of the base proflavine. Proflavine is the soluble sulphate of 3,6-diaminoacridine. As far as we know, proflavine oleate is not obtainable in the United States.

Proflavine has been proposed in England for use as a wound antiseptic, based on the work chiefly of C. H. Browning and his associates, but its usefulness has been seriously questioned in the British medical journals. Recently, Browning has proposed the use of proflavine oleate; he states that it is comparatively insoluble in water; but when it, or the ointment containing it, is shaken with serum, the latter dissolves sufficient of the compound to acquire antiseptic properties. The ointment used by Berkeley and Bonney (reported in The Journal's abstract) contained 1 per cent. proflavine oleate in a base of equal parts by weight of petrolatum and calcium carbonate.

BUTTERMILK THERAPY

To the Editor:—1. Please state where I can get reliable information on buttermilk therapy. Is it possible for me to get tablets which I can add to sweet milk which will make it a good substitute for buttermilk when buttermilk is not obtainable?

2. What is it in buttermilk that makes it "agree so well" with so many people?

Please do not use my name. M.D., Wyoming.

Answer.—1. For reliable information with regard to new therapeutic measures and reliable brands of drugs proposed for them, consult New and Nonofficial Remedies. As regards sour milk therapy, this book contains a chapter which discusses the probable value of the Metchnikoff sour milk therapy. The book also describes those brands of tablets which the Council on Pharmacy and Chemistry has found to be reliable and exploited decently.

2. Probably a number of causes contribute to the fact that buttermilk is well borne in certain cases of indigestion. Among these are the beneficial effect resulting from the change of diet, and the fact that the protein of milk is partially digested in the process of souring.

CARBON TETRACHLORID AS A FIRE EXTINGUISHER

To the Editor:—I am anxious to ascertain the nature of the substance or compound used in automobile fire extinguishers (mine is a Pyrene). The fluid is highly volatile, with an odor much like carbon bisulphid; but it is not inflammable or a supporter of combustion. Possibly you know or could learn what it is composed of. I shall be pleased to send a sample if you desire.

Joseph Marple, M.D., Los Angeles.

Answer.—According to the United States Dispensatory, "Pyrene" is the trade name for carbon tetrachlorid, when sold as a fire extinguisher. The odor mentioned is probably due in part to some carbon disulphid; this impurity is present in certain commercial grades of carbon tetrachlorid.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

Nevada: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

New Mexico: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

New York September Examination

Mr. George M. Wiley, director, Examinations and Inspections Division, reports the written examination held at Albany, Buffalo, New York and Syracuse, Sept. 24-27, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 91 candidates examined, 61 passed and 30 failed. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
Chicago Homeopathic Medical College	(1896)	1
Boston University	(1912)	1
Harvard University	(1914) (1918)	2
Tufts College Medical School	(1902)	1
Albany Medical College	(1917) (1918)	2
Columbia University	(1918)	7
Cornell University	(1916) (1917) (1918, 5)	7
Fordham University	(1917, 2) (1918, 3)	5
Long Island College Hospital	(1917) (1918, 3)	4
New York Homeo. Med. Coll. & Flower Hosp.	(1918)	11
New York Med. Coll. and Hosp. for Women	(1918)	1
Syracuse University	(1916) (1917, 2)	3
University & Bellevue Hosp. Med. Coll.	(1917))1918, 11)	12
University of Pennsylvania	(1918)	3
Queen's University	(1917)	1
FAILED		
Howard University	(1916)	1
Tufts College Medical School	(1918)	1
University of Michigan Medical School	(1918)	1
Columbia University	(1915) (1918, 4)	5
Cornell University	(1918)	1
Fordham University	(1916)	1
N. Y. Homeo. Med. Coll. & Flower Hosp.	(1916, 4) (1918)	5
University & Bellevue Hosp. Med. Coll.	(1918)	2
University of Buffalo	(1917)	1
Jefferson Medical College	(1918)	1
Medico-Chirurgical College of Philadelphia	(1916)	1
University of Pennsylvania	(1915) (1918)	2
Woman's Med. Coll. of Pennsylvania	(1913)	1
Medical College of the State of S. C.	(1911)	1
Medical College of Virginia	(1917)	1
Queen's University	(1914) (1916)	2
University of Naples	(1897)	1
University of Berne	(1910)	1
Syrian Protestant College	(1914)	1

Mr. Wiley also reports that 2 candidates were licensed by endorsement of credentials, and 1 by reciprocity. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Western Reserve University		(1917)	Ohio

College	LICENSED BY INDORSEMENT	Year Grad.	No. Indorsed
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1881)	1
McGill University		(1904)	1

New York Report

Mr. George M. Wiley, director, Examinations and Inspections Division, reports that 9 candidates were granted certificates by reciprocity; 2 candidates were licensed by indorsement under provisions of Chapter 357, laws of 1917, and 3 candidates were granted reregistration certificates to March 1, 1919. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1908)	Indiana
Columbia University		(1916)	New Jersey
Fordham University		(1915)	New Jersey
Long Island College Hospital		(1912)	New Jersey
University & Bellevue Hosp. Med. Coll.		(1899)	New Jersey
Starling-Ohio Medical College		(1914)	Ohio
University College of Medicine		(1910)	New Jersey
University of Virginia		(1915, 2)	Virginia

College	LICENSED BY INDORSEMENT	Year Grad.	No. Indorsed
Columbian University		(1883)	1
University of Pennsylvania		(1909)	1

Book Notices

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D., Professor of Physiological Chemistry and Toxicology in the Jefferson Medical College of Philadelphia. Sixth edition. Cloth. Price, $3.50 net. Pp. 661, with illustration. Philadelphia: P. Blakiston's Son & Co., 1918.

The most important feature of this book is the attention it gives to the methods of determination of different substances, particularly the more important ones, from a clinical point of view. The chapter on acidosis is of distinct value. As the volume deals primarily with physiologic chemistry, the space devoted to the description and enumeration of blood corpuscles or to the description of the morphologic elements of pathologic urine might better be devoted to matters more germane to the subject. If it is the intention of the author to include the excretion of drugs, the chapters on arsenic and mercury are not sufficient; if not, they are out of place. The illustration of the Berthelot-Atwater calorimeter, which could be clearer, should be supplemented by a description of its use or be left out entirely. The space given to the subjects mentioned might be devoted to some such purpose as the methods of quantitative determination of lactic acid. *d*-ribose deserves to be mentioned by name at least. On page 64 it is stated that "the nitrogen in the protein molecule occurs in at least four different forms as follows: I Monamino acid nitrogen, II Diamino acid nitrogen or basic nitrogen, III Amide nitrogen, IV A guanidine residue." No doubt the amid under III is a misprint and should read imid. But the statement is confusing. The nitrogen in I and II occurs in the same form. What is meant is that the protein molecule is made up of various nitrogen-containing components, which may be classified in the manner indicated: I, monamino acids; II, diamino acids; III, substances containing nitrogen in imid form, and IV, substances containing nitrogen as in guanidin. These remarks are not intended to detract from the value of the book as a practical physiologic chemistry; as such it serves a useful purpose in an admirable manner.

Estudio Clínico de la Litiasis Urinaria: Casuística. Cálculos del Riñón, del Uréter, de la Vejiga y de la Uretra. Por el Doctor Angel Pulido Martin, Cirujano del Hospital de San Juan de Dios. Paper. Pp. 238, with illustrations. Madrid: Imprenta del Sucesor de Enrique Teodoro, 1918.

Pulido here reviews the clinical histories of the varied cases of stones of the urinary system, of which he has long made a specialty. He admits at the outset that we still have much to learn in regard to the causes that underlie the formation of calculi, passing then to enumerate the different explanations that have been advanced so far for this condition. The author discusses the various types of calculi, considering in detail symptomatology, diagnosis and treatment. In the chapter on diagnosis, he takes up in succession and at some length the assistance that may be derived from palpation, various types of sounds and explorers, the Bigelow aspirator, the cystoscope, the roentgen rays, the application of anesthesia, and the diagnostic value of the location and character of the pains that may be present.

A Handbook of Colloid-Chemistry: The Recognition of Colloids, the Theory of Colloids, and Their General Physico-Chemical Properties. By Dr. Wolfgang Ostwald, Privatdozent in the University of Leipzig. Second English Edition. Translated from the Third German Edition by Dr. Martin H. Fischer, Professor of Physiology in the University of Cincinnati; with Numerous Notes Added by Emil Hatschek, Cass Institute. Cloth. Price, $3.50 net. Pp. 284, with 63 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

The original translation has been revised and brought up to date by the translators. Colloid chemistry as a separate field of investigation is a relatively recent offspring of physical chemistry. Not many books are in existence which attempt to treat the subject comprehensively. The "practical introduction" gives an elementary general and special colloid analysis, that is, the elementary means of recognizing matter in colloidal state from matter not in colloidal state, and the manner of differentiating between various colloidal systems. Part I treats of general colloid chemistry. Paragraph 17 is captioned "The Concept of Colloid-Chemistry," and defines its field thus: "Colloid-Chemistry deals with the relations of the surface energies to other kinds of energy as shown in an especially characteristic way in dispersed heterogeneous systems." Part II treats of the mechanical properties of colloid systems. The book is apparently not intended as an easy introduction for the beginner in colloidal chemistry. It cannot fail to impress the reader with the far-reaching importance of the study of matter in the colloidal state.

War Story of the Canadian Army Medical Corps. By J. George Adami, M.D., F.R.S., A.D.M.S., in Charge of Records, Office of Director General Medical Services, O. M. F. C. Volume 1. Published for the Canadian War Records Office. Cloth. Price 5 shillings net. Pp. 288, with illustrations. London: Colour Ltd., 1918.

Dr. Adami needs no introduction to the medical profession as a writer either on scientific or on literary subjects. He wields a trenchant pen and guides it with a carefully accurate, far-seeing mind. In this instance, he approaches his subject with deep personal sympathy and feeling; the Canadian Army Medical Corps is fortunate in its present historian. This first volume concerns the rise of the C. A. M. C., its assembly, the second battle of Ypres, with the introduction of poison gas, and the establishment of hospital units in France, and other medical units on the line of communication. The next volume is to take up the work of the sanitary section of the first Canadian division, and continue the history of the Canadian Army Medical Corps during 1916. The story is enlivened by many personal notes from the diaries of officers intimately connected with the work. Numerous well drawn maps make clear the descriptions of action in the field. All who took even a remote part in the great conflict will find this a most interesting work.

Medicolegal

Standards for Treatment with Roentgen Rays

(Hunter v. Burroughs (Va.), 96 S. E. R. 360)

The Supreme Court of Appeals of Virginia, in a lengthy opinion, affirms a judgment in favor of plaintiff Burroughs for damages alleged to have been occasioned to him by the alleged malpractice of the defendant, a physician, in the treatment with roentgen rays of eczema with which the legs and ankles of the plaintiff were affected. The court says that it should be borne in mind that the case involved two standards of professional skill and care by which the evidence as to the competency and the conduct of the defendant was to be measured: one standard having reference to the technic or mechanical operation of the roentgen-ray apparatus, and the other standard having reference to the possession and use of the professional skill and care incumbent on the defendant with respect to the diagnosis and treatment of the disease of the plaintiff in matters other than the mere mechanical operation of the apparatus.

The two standards mentioned both involved, in this case, the highly specialized art of the treatment of the disease of the plaintiff by roentgen rays; and, so far as they did so, expert testimony before the jury fixing such standards was essential to the support of the verdict of the jury, since otherwise the jury, to the extent of the questions involving such specialized art, would have had no standard in mind by which to measure the other facts proved in the case. Now, as to the mechanical standard of skill and care, there was no expert evidence in the case except the testimony of the defendant and of other expert witnesses for the defendant; but there was sufficient evidence in the case, when measured by the mechanical standard fixed by the testimony of the defendant, to support the verdict of the jury. It is deemed sufficient to mention only the following details of such evidence: There was evidence in the case to the effect that the defendant did not keep an accurate record of the roentgen-ray treatment or any record of the exact "dose" of roentgen rays applied in the several treatments therewith; that if only the standard "dose" had been applied, it was extremely improbable that any bad result would have been caused. The cross-examination of the defendant tended to show that his memory of the "dose" applied by him in the several treatments was not to be relied on. There were inconsistent statements made by the defendant at different times as to his opinion of the causes of the bad result; and there was other evidence to support a conclusion of the jury that the "dose" in fact applied was not in accordance with the mechanical standard fixed by the expert testimony of the defendant himself. It was true that such testimony did not show that the bad result might not have happened without fault of the defendant; but there was sufficient of such evidence, the credibility and weight of which was for the jury, tending to show that the bad result was more probably due to lack of skill or negligence of the defendant as charged. This degree of proof is all that is required of a plaintiff in a civil case. He is not required to exclude by his proof the possibility of the result complained of having been due to causes for which the defendant is not responsible.

The cause of the injury being the roentgen rays was, however, but one element of fact in the case. As the jury was properly instructed, if the defendant exercised ordinary care and skill in the premises, the plaintiff was not entitled to recover damages, although the injuries complained of were caused by the roentgen-ray treatment; and the question still remained whether the defendant did or did not exercise such care and skill. The court thinks there was sufficient evidence in the case, when measured by the general professional standard, as well as by the mechanical standard of skill and care, to support the verdict of the jury.

It was correct to say that the standard by which the duty of the defendant to make the preliminary tests and examination of the patient before subjecting him to the roentgen-ray treatment had to be tested was whether other like specialists in good standing, in the same or similar localities as the defendant, would have been guilty of the omission to make such preliminary tests and examination, which test had to be applied by measuring the evidence, as it might be introduced on the trial, by the standard fixed by the testimony of experts on the subject. Failure to warn of danger in the treatment was not necessarily negligence, unless there was an assurance of a cure.

Waiver of Privilege by Implied Consent

(Dahlquist v. Denver & R. G. R. Co. (Utah), 174 Pac. R. 833)

The Supreme Court of Utah reverses a judgment obtained by the plaintiff, with direction to grant a new trial, in this personal injury case, on account of the erroneous exclusion of the testimony of a physician as privileged. On his direct examination, the plaintiff himself had testified somewhat in detail concerning the character and extent of his injuries, the pain and suffering endured, and his physical condition before and after the accident. He had also testified concerning the mode of treatment of his injuries and their character as described to him by the physician whose competency to testify was challenged by the plaintiff under the provisions of the Utah statute that:

> A physician or surgeon cannot, without the consent of his patient, be examined in a civil action, as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient.

The court says, on an application for rehearing which it denies, that a majority of the court agreed that where a party voluntarily, in a trial of his own cause, states what his physician did and said respecting the injuries which are the subject of litigation, he should not be permitted to close the mouth of the physician when offered as a witness by his adversary solely on the ground of privilege. That was the question here involved, and the only question intended to be determined. It was not intended to hold that the waiver of privilege opens the door for immaterial or irrelevant questions. The question as to whether or not the plaintiff was afflicted with syphilis was wholly immaterial in this particular case. The plaintiff was in the employment of the defendant as an able-bodied man at the regular wages usual in such employment. This was substantially admitted in the pleadings. If he was injured by the negligence of the defendant, and his permanent recovery rendered more precarious and doubtful by reason of such disease, the court knows of no authority or legal principle under which the defendant could claim immunity either wholly or in part on that account. The questions were therefore immaterial and were objectionable on that ground, but not on the ground of privilege.

It was contended that there is a vital distinction between the terms "waiver" and "consent" in the statutes pertaining to privilege; that where the word "consent" is used it means express consent, and not consent by implication. But counsel did not furnish the court with any authority on the subject supporting such distinction, nor has the court been able to find any. On the contrary, it appeared from their own argument that some statutes relating to privilege render a witness incompetent to testify in such cases and make no provision whatever for a surrender of the privilege either by waiver or consent. Notwithstanding this, the courts in those jurisdictions recognize the doctrine of waiver and find it by implication from the conduct of the party. Certainly, if waiver or consent may be implied under statutes which do not expressly provide for either, it ought not to be considered revolutionary to deduce it from a statute like that of Utah which expressly provides for it. The court is of the opinion that an examination of the several statutes of other states, and the decisions of the courts construing them, will disclose no warrant whatever for the distinction relied on by the defendant.

It was contended that statutes pertaining to privilege should be strictly construed. The court believes the statute should receive a reasonable construction. It does not believe that a statute which excludes testimony calculated to disclose the truth in the trial of a case should receive a rigidly strict construction in favor of the exclusion unless the terms of the statute are such as to leave no doubt that such was the intention of the lawmaking body. The statute of Utah provides that the privilege may be surrendered by consent, and the court is of the opinion that the consent may be implied from the patient's conduct.

The court believes that when a patient, who afterward becomes a party in court, is sworn as a witness in his own behalf and details the treatment applied by his physician, and states what his physician said concerning the injury or disease and its probable effects and consequences, he thereby consents to the physician testifying to the same extent that any other witness might testify if sworn in the case. And the court is convinced that its position is sustained by the great weight of authority.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

Alabama State Medical Association, Mobile, April 15.
American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anatomists, Pittsburgh, April 17-19.
American Association of Anesthetists, Atlantic City, June 9-10.
American Physiological Society, Baltimore, April 24-26.
American Proctologic Society, Atlantic City, June 7-9.
American Therapeutic Society, Atlantic City, June 6-7.
Arizona Medical Association, Globe, June 2-3.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, N. Y., June 5.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Georgia State Medical Association, Atlanta, April 17.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Massachusetts Medical Society, Boston, June 3-4.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Missouri State Medical Association, Excelsior Spgs., May 26-28
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
North Carolina State Medical Society, Pinehurst, April 15.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
Rhode Island Medical Society, Providence, June 5.
South Carolina Medical Association, Florence, April 15-16.
Texas State Medical Association, Waco, May 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

January, 1919, **75**, No. 3

Recent American Classifications of Mental Diseases. E. E. Southard, Chicago.—p. 331.
Analysis of Accuracy of Psychopathic Hospital Diagnoses. L. G. Lowrey, Boston.—p. 351.
Organization of State Hospital Service in Illinois. H. D. Singer, Chicago.—p. 371.
Psychopathologic Observations in Group of Feeble-Minded. E. L. Richards, Baltimore.—p. 379.
Problem of Pulmonary Tuberculosis in Psychiatric Hospital. S. A. Silk, Washington.—p. 393.
Psychologic Treatment of Retarded Depressions. L. P. Clark, New York City.—p. 407.
Critical Review of Pathogenesis of Dementia Praecox, with Discussion of Relation of Psychoanalytic Principles. M. Osnato, M. C., U. S. A. —p. 411.
Rehabilitation in Community of Patients Paroled from Institutions for Insane. S. N. Clark, Chicago.—p. 433.

American Journal of Ophthalmology, Chicago

March, 1919, **2**, No. 3

Ocular Internal Hemorrhage in Case of Bright's Disease. W. E. Kershner, Bath, Me.—p. 177.
Treatment of Trachoma and Chronic Conjunctivitis with Negative Pressure. B. M. Howley, New Brunswick.—p. 180.
Detaching of Bulbar Conjunctiva as Treatment of Trachomatous Pannus. K. Hiwatari, Kyoto, Japan.—p. 183.
Diffraction in Human Eye and Phenomena of Colored Rings Surrounding Luminous Sources. C. Sheard, Columbus, Ohio.—p. 185.
Tendon Tucker. W. Bishop, Minneapolis.—p. 195.
Transplantation of Portions of Vertical Recti for Abducens Paralysis with Successful Result. R. O'Connor, Oakland, Calif.—p. 197.
Case of Double Retinal Separation in Trench Nephritis. G. S. Derby, A. E. F.—p. 199.
Bilateral Tuberculoma of Orbital Lacrimal Glands. H. V. Wurdemann, Camp Lewis, Wash.—p. 201.
Spasm of Accommodation with Disturbance of Ocular Movements of Dental Origin. G. D. Murray, Scranton, Pa.—p. 202.

American Journal of Physiology, Baltimore

March 1, 1919, **48**, No. 2

*Reason for Specific Dynamic Action of Protein. W. E. Burge, Urbana.—p. 133.
Stability of Esterase in Ground Liver Preserved in Glycerol. J. P. Simonds, Chicago.—p. 141.
Mechanism of Ether Hyperglycemia. R. W. Keeton, Urbana, and E. L. Ross, Chicago.—p. 146.
Stimulation by Outward Diffusion of an Electrolyte from Irritable Tissue. W. D. Zoethout, Chicago.—p. 161.
Catalytic Power of Blood and Solid Tissue. F. C. Becht, Chicago. —p. 171.
*Influence of Internal Secretions on Formation of Bile. A. W. Downs, and N. B. Eddy, Montreal, Que.—p. 192.
*Baker's Yeast as Food for Man. P. B. Hawk. C. A. Smith, and R. C. Holder, Philadelphia.—p. 199.
*Compressed Yeast as Food for Growing Organism. P. B. Hawk, H. R. Fisback and O. Bergeim, Philadelphia.—p. 211.
Alterations in Activity of Terrapin's Heart Relative to Slight Changes in P Value of Perfusate. E. C. Andrus, Baltimore.—p. 221.
Comparative Study of Carbon Dioxid Production During Starvation in Planaria. C. M. Child, Chicago.—p. 231.
*Function of Nucleus of Living Cell. V. Lynch, Baltimore.—p. 258.

Specific Dynamic Action of Protein.—Evidence is presented by Burge to show that the amino (NH_2) group in the protein molecule renders protein, or meat, a more effective stimulant to catalase production and hence to heat production than fat, and that the glycerin radical in the fat molecule renders fat more effective in this respect than sugar.

Effect of Gland Extracts on Bile Secretion.—Downs and Eddy found that the amount of bile secreted is increased by secretin, and decreased by epinephrin and by mammary, orchic, ovarian, pancreatic and thymic gland substances. The bile secretion is not affected in a constant or definite manner by the substance of the spleen and thyroid.

Bakers' Yeast as Food for Man.—The metabolism of six men was studied by Hawk and others. Four of the six showed an improved nitrogen balance when fed the yeast diet. Moreover, the yeast diet produced an average daily gain of about 0.4 gm. of nitrogen per man above that noted before yeast was fed. The only interpretation is that these men found yeast a satisfactory article of diet. The yeast may be incorporated with meats, such as hamburg steak, and yields a preparation of very satisfactory taste. If the yeast is dried in a current of air at 105 C. and pulverized it may be substituted for 20 per cent. of the wheat flour used in bread making and yields a product which is very nutritious and of an attractive flavor. The average individual may ingest yeast sufficient to yield from 1 to 2 gm. of nitrogen per day, without securing any laxative effect. When as high as 4 gm. of yeast nitrogen are eaten, a laxative effect is generally observed and in some cases soft diarrheal stools result. It is suggested that this laxative action of yeast may be put to good use in overcoming constipation.

Compressed Yeast as Food for Growing Organism.—The results of these experiments made on rats show that the ordinary household compressed yeast has very important growth-promoting properties.

Function of Nucleus of Living Cell.—The experiments reported by Lynch offer support to the theory that the nucleus is the organ of synthesis. The enucleated cell may move, respire, digest, respond to stimuli and exhibit any activity which is dependent solely on catabolic or destructive processes of protoplasm. The group of phenomena which it never shows are those of growth and of regeneration and division. The phenomena of growth are essentially phenomena of organic synthesis, and the dependence of growth on the nucleus implies the dependence of organic synthesis on the nucleus.

American Journal of Public Health, Concord

March, 1919, **9**, No. 3

Plan for More Effective Federal and State Health Administration. F. L. Hoffman, Newark.—p. 161.
*Adjustments in Health Administration for Industrial Diseases on Account of War. E. R. Hayhurst, Columbus.—p. 169.
Democracy and Public Health Administration. C. J. Hastings, Toronto. —p. 172.
Taking Board of Health to People. B. L. Arms, Jacksonville, Fla.—p. 179.
Supply of Pharmaceutics and Medicines in War Times; Importance and Dangers. C. H. LaWall, Philadelphia.—p. 180.
Sterilization of Bottles for Pasteurized Milk. M. B. Hopkins and M. L. Kelly, Baltimore.—p. 183.
Reconstruction and the Child. S. J. Baker, New York City.—p. 185.
Reactions of Bacteriologic Media. J. F. Norton, Chicago.—p. 190.
Public Health Nursing in Extracantonment Zone. M. E. Lent, Washington.—p. 193.
Industrial Lighting. C. E. Clewell, Philadelphia.—p. 196.
Sanitation and Conservation in Municipal Utilities of Rochester, N. Y. E. A. Fisher, and J. F. Skinner, Rochester, N. Y.—p. 200.
Effect of Food Control on Food Supply. H. E. Barnard, Indianapolis. —p. 203.

Health Administration for Industrial Diseases.—Abstracted in The Journal, Jan. 4, 1919, p. 67.

American Review of Tuberculosis, Baltimore

March, 1919, **3**, No. 1

Experimental Tracheo-Bronchial Node Tuberculosis Together with Brief Consideration of Several Phases of Tuberculous Infection Suggested Thereby. A. K. Krause, Baltimore.—p. 1.
*Laboratory Observations on Influenza Epidemic in Government Tuberculosis Hospital. H. J. Corper and E. D. Downing, New Haven. —p. 10.
*Results of Sanatorium Treatment of Pulmonary Tuberculosis: Tuberculin. B. H. Waters and A. Peters, Jr., Loomis, N. Y.—p. 25.
Tuberculosis Control in an Army Cantonment. C. L. Wheaton, Camp Grant Rockford, Ill.—p. 39.
Rupture of Mediastinum During Artificial Pneumothorax. C. A. Wilson and R. G. Jones, Silver City, N. M.—p. 44.

Influenza Epidemic in Tuberculosis Hospital.—The influenza bacillus was found by Corper and Downing in the nose and throat of a fairly large percentage (14 per cent.) of apparently normal individuals, without symptoms of influenza, at the United States General Hospital No. 16, during the 1918 influenza pandemic. The organism was, however, isolated from a larger percentage (28.5 per cent.) of patients presenting symptoms of influenza. The influenza bacillus was isolated from the nose and throat of 24 per cent. of consumptives who were free from symptoms of acute disease, while in those presenting such symptoms the bacillus was obtained in 62 per cent. of the cases. In cases of typical uncomplicated influenza, the influenza bacillus was obtained in the sputum from 75 per cent. of the cases, while in patients presenting a bronchopneumonia, the organism was obtained in 100 per cent. of the cases. The influenza bacillus was not the only organism obtained from the sputum of influenza patients, but was commonly accompanied by some other organism, most frequently the pneumococcus (Type I, II, III or IV) or streptococcus. The latter organisms did not, however, occur as consistently as the influenza bacillus. Blood cultures in cases of influenza were uniformly negative for the influenza bacillus. Necropsy findings on eleven cases of influenza bronchopneumonia (seven of which presented pulmonary tuberculosis in some form; four active and three healed cases) revealed the influenza bacillus in the lungs in ten cases and the pneumococcus in eight. Influenza bacilli were never found in the blood, but pneumococci were found in three of the seven cases examined. The presence of the influenza bacillus in the sputum, during influenza epidemics, seems to be of definite diagnostic value, especially when taken in conjunction with clinical and roentgenologic findings.

Tuberculin in Treatment of Pulmonary Tuberculosis.—All things considered, this study by Waters and Peters does not furnish very impressive evidence of the value of tuberculin as a therapeutic agent in pulmonary tuberculosis. Its influence, if any, was in all probability extremely limited.

Archives of Pediatrics, New York

January, 1919, **36**, No. 1

Vaccine Therapy—Most Rational and Effective Method of Treating Whooping-Cough. C. J. Bloom.—p. 1.
Use of Vegetable Milk in Children. H. D. Chapin, New York.—p. 28.
Complement-Fixation Test for Tuberculosis in Infancy and Childhood. H. Heiman, New York.—p. 32.
Cornell Nutrition Class. M. G. Wilson, New York City.—p. 37.

Boston Medical and Surgical Journal

March 27, 1919, **180**, No. 13

Insufflation of Oxygen in Pneumonia. S. J. Meltzer, New York City. —p. 349.
Pneumonia and Empyema. H. Gray, Camp Devens, Mass.—p. 351. To be cont'd.
Case of Congenital Atresia of Esophagus. J. L. Huntington, J. H. Young, and N. C. Foot, Boston.—p. 354.

Colorado Medicine, Denver

March, 1919, **16**, No. 3

War's Influence on Prevailing Medical Theories. E. J. A. Rogers, Denver.—p. 52.
Heredity. G. A. Moleen, Denver.—p. 57.
Roentgenologic Evidence of Early Tuberculosis. F. B. Stephenson, Denver.—p. 61.
Inoperable Cancer. C. E. Tennant, Denver.—p. 66.

Florida Medical Association Journal, St. Augustine and Palatka

February, 1919, **5**, No. 8

Caudal Anesthesia. G. H. Hodgson, Tampa.—p. 135.
Diagnosis of Tubal Pregnancy. R. R. Sullivan, Lakeland.—p. 137.
Mobilizing Nurses of America for Peace. J. A. Delano, Washington, D. C.—p. 139.

Indiana State Medical Association Journal, Fort Wayne

March 15, 1919, **12**, No. 3

*Bacteremia and Toxemia as They Affect Single Organs. H. O. Pantzer, —p. 61.
Preliminary Thyroid Operations. G. Link, Indianapolis.—p. 64.
Malignant Epithelial Growths of Thyroid. H. K. Bonn, Indianapolis. —p. 67.
*Factors of Safety in Abdominal Hysterectomy. D. Guthrie, Sayre, Pa.—p. 71.
Soldier's Heart. G. S. Bond, Indianapolis.—p. 74.

Bacteremia and Toxemia.—Abstracted in The Journal, Nov. 30, 1918, p. 1855.

Abdominal Hysterectomy.—Abstracted in The Journal, Nov. 30, 1918, p. 1854.

Journal of Experimental Medicine, Baltimore

April 1, 1919, **29**, No. 4

*Effect of Carbon Dioxid in Cultivation of Meningococcus. F. L. Gates, New York City.—p. 321.
Cicatrization of Wounds. P. L. du Nouy, Compiègne, France.—p. 329.
*Wassermann Reaction: Using Cholesterolized Antigen According to McIntosh and Fildes. P. A. Lewis and H. S. Newcomer, Philadelphia.—p. 351.
*Migration of Parasites as Cause of Anemia in Estivo-Autumnal Malarial Infections. M. R. Lawson, New London.—p. 361.
*Functional Value of Newly Formed Connective Tissue. P. A. Lewis and H. S. Newcomer, Philadelphia.—p. 369.
*Persistence of Virus of Poliomyelitis in Nasopharynx. S. Flexner and H. L. Amoss, New York City.—p. 379.
*Renal Function Influenced by Intestinal Obstruction. I. McQuarrie and G. H. Whipple, San Francisco.—p. 397.
*Renal Function Influenced by Proteose Intoxication. I. McQuarrie and G. H. Whipple, San Francisco.—p. 421.

Cultivation of Meningococcus.—The experiments reported by Gates are the outcome of observations made in applying the recommendation of Cohen and his associates that meningococci be grown at a partial oxygen tension, obtained by substituting carbon dioxid for approximately 10 per cent. of the air in a closed container. Gates found that the meningococcus is not a "micro-aerophil." It grows equally well in atmospheres containing from 15 to 40 per cent. oxygen. If small amounts of carbon dioxid affect the growth of the meningococcus on an artificial medium it is by changing the reaction of the medium, not by slightly reducing the oxygen tension of the surrounding air. The fallibility of titrating the total acidity of a medium is again clearly demonstrated. A reaction favorable to the meningococcus cannot be determined from the total titratable acidity, but depends solely on the hydrogen *ion concentration of the medium.* The optimum for the meningococcus is approximately at p_H 7.4. The value of a moist chamber in the cultivation of the meningococcus is shown by unusually luxuriant growth when other conditions are also favorable.

Wassermann Reaction.—The question of the Wassermann reaction as practically applied was reviewed by Lewis and Newcomer with the purposes of (1) reconsidering the suitability of the cholesterolized antigen, and (2) examining the merits of the newer Noguchi system. They found that the Wassermann reaction carried out according to the method of McIntosh and Fildes, with cholesterolized antigen and with certain allowances for the presence of native antisheep amboceptor, leads to about the same result as when it is done according to the recent proposal of Noguchi, with the native human complement and acetone-insoluble lipoids as antigen. The differences are such as to suggest that from the point of view of diagnosis the Noguchi method is the more conservative but that there is definite advantage in using two methods as distinct in origin of materials as these, partly for the purpose of control and partly in hope of acquiring new information of importance. As a measure of control of treatment, the cholesterol antigen appears to the authors to be the more valuable. The Wassermann reaction alone, by whatever method it may be done, can only be used in the diagnosis of syphilis in conjunction with presumption based on other grounds. That it fails to appear in a considerable percentage of syphilitics is well known. That the reaction is positive in other conditions is not so generally recognized. Fresh instances of this in certain febrile cases are here recorded.

Estivo-Autumnal Malarial Infections.—The anemia in malarial infections, in Lawson's opinion, is explained by the fact that each parasite destroys several red corpuscles. Reduction of hemoglobin out of proportion to the loss of red corpuscles is explained by the fact that there is always a partial loss of hemoglobin in certain of the surviving corpuscles due to parasitic action. Migration of parasites occurs in all estivo-autumnal infections.

Newly Formed Connective Tissue.—The tensile strength of newly formed connective tissue was thus evaluated by Lewis and Newcomer: Adult rabbits were anesthetized with ether. With various degrees of aseptic precaution the Achilles tendon was exposed and sectioned. At various intervals thereafter the animal was killed and the leg amputated at the hip and suspended by the knee through a strong wire loop as an intermediary to a stout chain hung from the ceiling. With a similar wire loop a pail was suspended from the hock. Into this pail clean sand was run from a funnel at a uniform rate and from a uniform height. When a break occurred the flow of sand was stopped, the pail, its contained sand, and all the apparatus coming away with the foot were weighed, the result being recorded in grams as the tensile strength of the newly formed tissue.

Virus of Poliomyelitis in Nasopharynx.—The results of the experiments reported by Flexner and Amoss conform closely with clinical experience in the United States, at least, and especially with the observations made by epidemiologists in the course of the wide epidemic in New York state and elsewhere during the summer and autumn of 1916. The conclusion reached at that time was to the effect that the communicability of the disease was a phenomenon chiefly of the early stages, while the frankly paralyzed person and the convalescent were to be feared much less. In the authors' experiments, infection was secured with tissues obtained during the first week, approximately, of the disease but not at the later periods. The deduction from the experiments reported is to the effect that the virus is regularly present in the nasopharynx in cases of poliomyelitis in the first days of illness, and especially in fatal cases; that it diminishes relatively quickly as the disease progresses, except in rare instances; and that it is unusual for a carrier state to be developed. Hence the period of greatest infectivity of patients would appear to be early in the disease, which is probably the time at which communication of the virus from person to person takes place. Available evidence proves that healthy carriers of the virus occur. The authors do not, however, possess data which indicate the frequency with which carriage arises. The fact that even after a severe and wide epidemic, such as occurred in the United States in 1916, the disease may virtually disappear within two or three years, points to the probability that enduring carriers of the active virus, whether healthy or chronic, are of exceptional occurrence.

Renal Function in Intestinal Obstruction.—The eliminative function of the kidneys during periods of intoxication due to intestinal obstruction was investigated by McQuarrie and Whipple. Associated with the intoxication of intestinal obstruction there exists a definite impairment of the excretory function of the kidneys. The degree of functional depression corresponds roughly with the intensity of the clinical intoxication. The decrease in the uria ratio and in the capacity of the kidneys to excrete sodium chlorid is more marked than is the percentage decease of phenolsulphonephthalein elimination. The great increase in the nonprotein nitrogen of the blood usually observed in acute intestinal obstruction, which has hitherto been explained as being due entirely to an increased rate of protein catabolism, is due in part to retention of the products released from the injured cell protein. The authors suggest that it is probable that the impaired renal function is due to direct action of the toxic substances on the renal epithelium. The actual demonstration of this renal injury is perhaps the strongest evidence so far obtained to prove the presence of an actual toxic substance in the blood during intestinal obstruction. This obscure disability of the kidneys during the height of the intoxication of acute ileus should always be considered in the clinical management of this condition. It may also serve as a guide to indicate the degree of intoxication.

Renal Function in Proteose Intoxication.—The outstanding fact presented by McQuarrie and Whipple is that the injection of the toxic proteose obtained from the contents of the obstructed small intestine causes a definite impairment of the eliminative function of the kidneys as shown by a decreased capacity to excrete urea, sodium chlorid, and phenolsulphonephthalein. This involvement of the renal function is similar to that shown by the preceding report to accompany the intoxication of intestinal obstruction. The observed depression of function is readily demonstrable even when large amounts of fluid and urea, dye, or salt are injected directly into the blood stream. There is in all probability a temporary injury of the kidney cells, since the most important extrarenal factors have been largely eliminated in the experiments. There is no appreciable impairment of the renal function following the injection of a number of other proteose preparations from a variety of sources. This study affords new evidence in favor of the view that the function of an organ can be profoundly disturbed for a time without any demonstrable anatomic lesions. The repair of this type of injury promptly follows the disappearance of the intoxication, and is functionally and anatomically perfect.

Journal of Infectious Diseases, Chicago

April, 1919, 24, No. 4

Studies in Bacterial Nutrition: Utilization of Nitrogenous Compounds of Definite Chemical Composition. S. A. Koser and L. F. Rettger, New Haven, Conn.—p. 301.

*Rapid Methods for Bacteriologic Analysis of Milk. J. E. Simmons, Madison, Wis.—p. 322.

Acquired Immunity to Animal Parasites. F. H. Reuling, Chicago.—p. 337.

*Specificity of Bacterial Proteolytic Enzymes and Their Formation. H. S. Diehl, Minneapolis.—p. 347.

Blackleg Toxin. T. P. Haslam and J. W. Lumb, Purity Biological Laboratories, Sioux City, Ia.—p. 362.

*Rat-Bite Fever Spirochete. S. Kusama, R. Kobayashi and K. Kasai, Tokyo.—p. 366.

*Exclusion of Air in Cultivation of Gonococcus. E. H. Ruediger, Bismarck, N. J.—p. 376.

*Germicidal Power of Antiseptic Oils and Substances Dissolved in Oil. P. D. McMaster, Philadelphia.—p. 378.

*Hemolytic Streptococci in Faucial Tonsil and their Significance as Secondary Invaders. I. Pilot and D. J. Davis, Chicago.—p. 386.

*Double Sugar Medium for Cultural Diagnosis of Intestinal and other Bacteria. A. I. Kendall and M. Ryan.—p. 400.

Bacteriologic Analysis of Milk.—One hundred and thirty-six milks, varying in bacterial content from 50 to 160,000,000 per cubic centimeter, have been analyzed by Simmons by five different methods: direct microscopic, standard plate, lactose plate, little plate (Frost), and reduction test. In milks containing less than 1,000,000 bacteria per cubic centimeter, the three methods—standard plate, lactose plate and little plate—gave closely comparable results. The lactose plates on the whole gave results slightly higher than the plain agar plates, and these results seemed to follow the trend of the little plate counts somewhat more closely than the standard plates. The direct microscopic count was less reliable with milks having a low bacterial content than it was with poor milks. In milks containing upward of 1,000,000 bacteria per cubic centimeter, the lactose plates were found to be considerably higher (50 per cent.) than the standard plates, the little plates tended to run somewhat lower, while the direct microscopic count gave highly satisfactory results. The time of the reduction test varied from one-half hour to thirty hours. Occasionally inexplicable variations occurred in the different classes of milks, but when these were smoothed out by applying a "moving average," a curve was obtained which closely approximates those obtained by the other methods.

Specificity and Formation of Proteolytic Enzymes.—The work done by Diehl suggests that differences in the chemical constituents of mediums may account for many of the unverified "new strains" of bacteria, the differentiation of which is based on some minor phase of their action on culture mediums. For instance, on a medium containing no organic nitrogen, no proteolytic enzymes are formed by bacteria. On gelatin, casein, broth, agar and peptone, enzymes are formed which will digest both gelatin and casein. Proteolytic enzymes are apparently formed to correspond to the different amino-acids present in the medium and will then attack these acids whether combined or free. These enzymes are not preformed in the bacterial cell but are dependent on the content of the medium on which it grows.

Rat-Bite Fever Spirochete.—In the infected wild rat, white rat and guinea-pig, the spirochete of rat-bite fever, in the early stages of the infection, was detected by Kusama and others principally in the blood; but after two weeks a large number appeared in the connective tissues, and as time went on this number was gradually increased. That is, this spirochete was always distributed numerously in the subcutaneous and submucous tissues of the eyelids, lips, bridge of the nose and tongue, and was especially abundant in the reticular connective tissue of the vascular sinus surrounding the follicle of the tactile hair of the upper eyelids and lips. It was also usually, if not always, found abundantly in the capsules of the salivary and lymph glands, in the heart wall, in the adventitia of the aorta and large arteries within the visceral organs, and sometimes in the endocardium of the heart. It could also be detected in the spleen, the liver, the suprarenal glands, the kidneys, the parenchyma of the salivary and lymph glands, etc. The spirochete was neither excreted through the saliva from the salivary gland nor mixed into the saliva through the normal mucous membrane of the mouth cavity from its submucous source. The excretion of the organism in the urine was comparatively rare. It is transmitted to a healthy animal through a wound caused by the bite of an infected animal, and the authors believe that in order to be transmitted it passes from the submucous source or from the circulating blood through an abrasion in the mouth, such as frequently occurs in the wild rat at the time of the bite. By keeping the infected and healthy animals in the same cage, they found no positive case among eleven guinea-pigs, and only two positive cases among twenty-nine mice. By feeding experiments they could find only two positive cases among fourteen guinea-pigs, and four among twenty-nine mice, so that it is natural to suppose that the infection in the positive cases resulted from an injured surface in the alimentary canal rather than by transmission through the normal mucous membrane. By instillation of the infected blood into the eye, they proved only one positive case among nineteen mice, and four among fourteen guinea-pigs. Thus, it seems hardly possible that this organism enters the animal body through the normal conjunctiva, at least, in the case of the mouse. The monkey inoculated with human or wild rat strain shows the pyrexia of relapsing type, but if the field vole strain is used, there is no fever.

The immune serum of the Japonese monkey treated with the human or wild rat strain exerts a spirocheticidal action on all three strains, while the field vole serum has only a slight action on the field vole strain, but none on the other two. The Japanese monkey, recovered from the infection, even if it be caused by the field vole strain, does not show any further symptoms after being reinoculated with human strain. The spirochete under discussion does not undergo any considerable variation in virulence and immunizing power, in passing through the body of the human being, monkey, guinea-pig, wild rat, white rate, mouse, etc., but in passing through the body of the field vole it seems to decrease its toxophore and haptophore groups quantitatively.

Exclusion of Air in Cultivation of Gonococcus.—Cultures of gram-negative diplococci have been obtained by Ruediger from gonorrheal material on medium composed of veal broth, made neutral to phenolphthalein, agar, salt, peptone and 10 per cent. human blood which had been heated to 56 C. for thirty minutes. Little or no growth was obtained on medium containing unheated human blood. On medium without salt, the diplococci grew about as well as on the medium with salt. The addition of glycerol or glucose seemed to be unfavorable as was also the omission of peptone. The culture tubes had to be stoppered air-tight. The growth obtained was nearly as luxuriant as that of *B. typhosus* on ordinary nutrient agar, and so far has been uniformly successful.

Germicidal Power of Oils and Oil-Dissolved Substances.—The typhoid bacillus was used by McMaster in his work. About twenty tubes of each type were planted on nutrient agar, and after from twenty-four to forty-eight hours' growth the tubes were filled with liquid petrolatum containing various percentages of phenol. Of the forty-eight-hour cultures, none were killed by 0.2 per cent., but all were killed by 0.6 per cent. phenol. In about half of the tubes 0.4 per cent. killed. The most resistant cultures were those in which the surface had been intentionally wounded, the growth being therefore rather deep and presumably protected from the action of the disinfectant. The minimal killing concentration of paracresol was from 0.2 to 0.3 per cent. and of guaiacol from 0.8 to 1 per cent. The particular brand of oil used did not change the results in any way. The action of phenol in all oils is the same. Experiments with menthol, camphor and turpentine resin showed that these did not kill in the highest concentrations that could be obtained. A series of tests were also made of dichloramin-T, eucalyptol, chlorinated liquid petrolatum and chlorinated eucalyptol. McMaster believes that his method may provisionally be regarded as satisfactory for determining quantitatively the germicidal power of antiseptic oils and substances dissolved in oil.

Hemolytic Streptococci in Tonsils as Secondary Invaders.—Hemolytic streptococci were recovered by Pilot and Davis by swab cultures in sparse numbers from the pharynx and tonsillar surfaces in 61 per cent. of 100 throats, chiefly children with hyperplastic tonsils; and from the crypts of the excised tonsils of the same individuals in 97 per cent., usually in predominating numbers. Swab cultures are, therefore, unreliable in determining the incidence of this organism in the respiratory tract. The frequency of hemolytic streptococci is decidedly less in the throats of persons whose tonsils have been extirpated than in the throats of persons with normal tonsils. The authors suggest that hemolytic streptococci from the crypts of tonsils are probably the most important source of the streptococcus complications of the various acute infectious diseases, and of the terminal infections.

Double Sugar Medium.—The double sugar medium used by Kendall and Ryan contains saccharose, 1 per cent., and mannitol, 0.1 per cent. It distinguishes between the various saccharose acid and gas, and the mannitol acid and gas producers, thus materially increasing the definiteness of cultural diagnosis and reducing somewhat the necessity for final agglutination with specific or polyvalent serum.

Journal of General Physiology, Baltimore

March 20, 1919, **1**, No. 4

Influence of Electrolytes on Viscosity of Dough. L. J. Henderson, W. O. Fenn, and E. J. Cohn, Cambridge, Mass.—p. 387.
Comparative Studies on Respiration. VI. Increased Production of Carbon Dioxid Accompanied by Decrease of Acidity. M. Irwin, Cambridge.—p. 399.
Decrease of Permeability and Antagonistic Effects Caused by Bile Salts. W. J. V. Osterhout, Cambridge.—p. 405.
Comparison of Permeability in Plant and Animal Cells. W. J. V. Osterhout, Cambridge.—p. 409.
Relation Between Oxygen Concentration and Rate of Reduction of Methylene Blue by Milk. E. N. Harvey, Princeton.—p. 415.
Influence of Temperature and Hydrogen Ion Concentration on Spore Cycle of Bacillus Subtilis. A. Itano and J. Neill, Amherst, Mass. —p. 421.
Bioelements; Chemical Elements of Living Matter. I. W. D. Hackh, San Francisco.—p. 429.
Photocreations of Partially Blinded Whip-Tail Scorpions. B. M. Patten, Cleveland.—p. 435.
Action of Acid and Alkali on Gluten. I. J. Henderson, E. J. Cohn, P. H. Cathcart, J. D. Wachmann, and W. O. Fenn, Cambridge. —p. 459.
Relation Between Thyroid Gland, Metamorphosis, and Growth. E. Uhlenhuth, New York City.—p. 473.
Amphoteric Colloids: IV. Influence of Valency of Cations on Physical Properties of Gelatin. J. Loeb, New York City.—p. 483.

Maine Medical Association Journal, Portland

March, 1919, **9**, No. 8

Eyes in War. J. A. Spalding, Portland, Me.—p. 197.
War Surgery Applied to Problems of Civil Practice. C. M. Robinson, Portland, Me.—p. 210.

Maryland Medical and Chirurgical Faculty Bulletin, Baltimore

February, 1919, **11**, No. 5

What Should be Real Significance of Entrance of State Dental Association into Membership? B. M. Hopkinson, Baltimore.—p. 123.

Medical Record, New York

March 29, 1919, **95**, No. 13

Roentgen Ray Visualization of Intestine by Means of New Intestinal Delineator. M. Einhorn, New York City.—p. 509.
Roentgengraphic Types of Influenzal Pneumonias. E. Fox, New York City.—p. 513.
*Prepuce as Grafting Material. I. C. Eisenberg, New York City.—p. 514.
*Prevention of Influenza. Public Health Committee of New York Academy of Medicine.—p. 516.
Dietary Deficiency and Disease. J. Aulde, Philadelphia.—p. 518.
Bacillus or Disease; Which Should be Treated in Influenza? B. Robinson, New York City.—p. 519.
Singers' and Speakers' Sore Throat. J. J. Levbarg, New York City. —p. 520.

Prepuce as Grafting Material.—A case is cited by Eisenberg in which the patient, a boy, 16 years of age, lost the last phalanx, part of the periosteum of the second phalanx, and the skin down to the lower third of the first phalanx of one of his fingers. A plastic operation was done, using the prepuce for grafts. On the thirty-eighth day after the accident, Eisenberg performed circumcision; then, after having the prepuce emptied of blood, he made a few buttonholes to allow free escape of serum and underlying air, pressed the graft firmly in place, all in one piece (like a finger stall), in order to remove the blood, bulbs of air, and as much moisture as possible. It was then dressed with neutral solution of chlorinated soda, a cotton wool bandage being applied firmly to insure close adaptation of the graft to the granular surface of the finger. In sixty days, cicatrization was complete.

Prevention of Influenza.—This report details the measures in use during the recent epidemic. Nothing new is added.

New Orleans Medical and Surgical Journal

April, 1919, **71**, No. 10

Laboratory as Aid in Diagnosis of Pneumococcal Complications of Influenza. F. M. Johns, New Orleans.—p. 421.
Is Argyrol Useless? H. D. Burns, New Orleans.—p. 426.
Practical Congenital Syphilis. C. J. Bloom, New Orleans.—p. 436.
*New Technic for Suspension of Kidney. R. M. Penick, Shreveport, La.—p. 444.

New Technic for Suspension of Kidney.—Penick uses the Kelly incision, approaching the kidney through the superior lumbar trigonum, only he makes the incision a little larger, if necessary. When the deep lumbar fascia is reached it is opened with a clean cut, and beginning at the lower angle of the wound a ribbon of fascia is dissected about two-thirds inch wide. The end is secured with a hemostat and laid aside for the present, and the operator proceeds to deliver the kidney up into the wound as usual. The perirenal fat is stripped to the hilum and the capsule incised and dissected, the sutures introduced, two on each side. These sutures are caught in hemostats and laid aside while the perirenal fat is gathered by a circumferential large suture, forming a cup-shaped support under the kidney, and the ends are left long for later attachment at the lower angle of the wound in the musculature. The ribbon of fascia is now picked up and a large chromic gut suture threaded into the end to prolong it; it is then fitted around the lower pole of the kidney, just below the hilum, and a stitch securing it to the capsule of the kidney near the front is introduced to prevent slipping. The ends of the suture, prolonging the ribbon of the fascia, are left in the hemostat while the kidney is being replaced, and the sutures of the capsule are secured in the adjacent musculature, as usual in this procedure. When this stage is reached the kidney is placed in the position desired and the suture prolonging the ribbon of fascia threaded on a carrier or large needle and fixed in the muscles of the back, at the most convenient point, fitting snugly around the kidney and holding it securely while the denuded surface on the kidney forms adhesions. The large sutures in the subphrenic fat securing a support under the kidney are now drawn sufficiently taut, forming a cup-shaped support. This last procedure closes the loose space under the kidney. The wound is then closed in the usual way, layer by layer.

New York Medical Journal, New York

March 29, 1919, **109**, No. 13

Etiology and Treatment of Colds. O. T. Osborne, New Haven, Conn.—p. 529.
Venereal Disease Problem. L. L. Harris, New York City.—p. 531.
*Artificial Pneumothorax in Pulmonary Tuberculosis (to be continued). L. S. Peters, Albuquerque.—p. 535.
Resistance to Disease. C. L. Redfield, Chicago.—p. 542.
*Comparison of Bacteriology of Pneumonia, Antemortem and Postmortem. E. C. Birge, and L. C. Havens, Camp Wadsworth, S. C.—p. 544.
Influenza Epidemic at Camp Greenleaf. J. L. Swarts, Camp Greenleaf, Ga.—p. 546.
Diabetes Mellitus. T. W. Edgar, New York City.—p. 548.
Differential Diagnosis of Cutaneous Lesions at Bordeaux School. C. G. Cumston, Geneva, Switzerland.—p. 550.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 553. (To be continued).

Pneumothorax in Tuberculosis.—For the past six years, Peters has been treating suitable cases of tuberculosis by means of compression and with good results. He has seen apparently hopeless cases cured, and has seen the last days of the dying consumptive made easier by a relief of distressing symptoms. Peters gives facts based on a large experience, and a careful study of the literature, with the hope that more physicians will be induced to use a real means of aiding the tuberculous patients. The next paper will give details of the observations made by Peters.

Bacteriology of Pneumonia.—One hundred and twenty-four cases that came to necropsy and from which cultures were obtained are analyzed, as to their bacterial findings, by Birge and Havens. Of these, sixty cases were typed antemortem. In a strikingly large number of cases, *Streptococcus hemolyticus* was the predominating organism, and relatively a large number of cases in which it was the predominating organism antemortem. The relatively large number of Type III pneumococci recovered at necropsy coupled with the relatively small number found antemortem is accounted for by the fact that a large number of specimens of sputum were poor when submitted for examination. The numbers of Type III pneumonias, confirmed by necropsy, was practically the same as the numbers of Type IV. A search was made for healthy carriers of Type III pneumococci in an attempt to explain the cases found. Among the 600 men examined, 2 per cent. were found to harbor this type. These men gave no history of their association with pneumonia, and were possibly the source of the cases entering the hospital. The cases which showed *Streptococcus hemolyticus* both antemortem and postmortem occurred early in the epidemic, when there were a large number of healthy carriers of this organism in the camp and most of the admissions to the hospital showed a pedominance of this organism in the throat cultures. It is considered, in these cases at least, as being the cause of the infection and death. *Bacillus influenzae* was isolated from only one case during the epidemic in which this organism might possibly be considered as the etiologic factor. *Bacillus influenzae* was isolated both from the sputum and at necropsy in eleven other cases, but only in connection with other organisms which were more virulent and which could account for the pathologic changes found at necropsy. Of the twenty-eight cases of Type IV pneumococcus found in the sputum antemortem only nine were confirmed by the necropsy findings.

Philippine Journal of Science, Manila

November, 1918, **13**, Sec. B, No. 6

*Endemic Malaria in Philippine Islands as Military Problem. F. G. Haughwout, Manila.—p. 287.
Study of Calcium Glands in Common Philippine House Lizard. E. S. Ruth, Manila.—p. 311.
Study of One Hundred Thirty-Five Human Embryos and Fetuses Collected in Philippine Islands. E. S. Ruth, Manila.—p. 319.

Endemic Malaria as Military Problem.—Haughwout calls attention to the fact that the recruiting of large bodies of men destined to form army units, from areas in tropical countries where malaria is known to be endemic, is certain to bring together many men, who, apparently healthy, are yet carriers of the malarial parasite and are capable of conveying it to healthy persons. These carriers, in the presence of anopheline mosquitoes, are a source of peril to any community that is comparatively free from the malarial fevers. They are likewise a peril in their own garrison, and great care should be exercised in the selection of a site on which to establish a training camp. Such men, on undergoing the heavy work of military training, with its attendant fatigue and exposure, are extremely likely to develop the disease in its active form with the consequence that the effective strength of their unit will be reduced.

Public Health Journal, Toronto

March, 1919, **10**, No. 3

Democracy and Public Health Administration. C. J. Hastings, Toronto—p. 97.
Medical Profession as Public Service for Health. P. H. Bryce, Ottawa—p. 113.

Texas State Journal of Medicine, Fort Worth

March, 1919, **14**, No. 11

Case Resembling Pulmonary Tuberculosis—Long Retention of Foreign Body in Bronchus. I. S. Kahn, San Antonio.—p. 350.
Case of Concealed Hemorrhage of Scalp. B. G. Prestridge, Alvarado, Tex.—p. 351.
Arthroplasty of Thumb and Finger Joints. G. Hamilton, Houston.—p. 353.
Surgical Abdomen. F. U. Painter, Corpus Christi.—p. 354.
Rural School Sanitation. L. G. Lenert, Texas State Board of Health.—p. 356.

War Medicine, Paris

November, 1918, **2**, No. 4

*Streptococcus Infections of Lungs in British Army. J. A. Wilson, B. A. F.—p. 556.
*Susceptibility of Convalescents from Measles to Streptococcus Infections. R. L. Levy, M. C.—p. 560.
Relation of Streptococcus Hemolyticus to Pneumonia in Troops in United States. W. Longcope, M. C.—p. 566.
Limitations and Control of Streptococcus and other Respiratory Infections. J. A. Capps, M. C.—p. 571.
Treatment of 420 Infected Wounds under Battle Conditions. Surgical Staff of Lakeside Unit.—p. 587.

December, 1918, **2**, No. 5

Trench Foot. J. Cottet.—p. 707.
"Trench Feet" Prevention. R. S. H. Fuhr.—p. 712.
Trench Foot Treatment. G. K. Ashford.—p. 717.
Renovation of Sick and Wounded and Restoration to Forward Area by Methods Usually Followed in Convalescent Depots. Dalrymple.—p. 746.
Recuperation of Wounded and Sick to Front from Psychologic Viewpoint. Laignel-Lavastine.—p. 750.
Functions of a Convalescent Camp. Neff.—p. 757.
Effort Syndrome. A. E. Cohn.—p. 761.
Restoration of Sick and Wounded to Line. Frank Billings.—p. 766.
Traumatic Shock and Hemorrhage.—p. 810.
Suture of War Wounds. R. Lemaitre.—p. 790.

Streptococcus Infections of Lungs.—During the investigation of a severe epidemic of diarrheal diseases, a group of cases was encountered by Wilson which presented relatively unusual features: first, in that the degree of anemia was quite out of proportion to the amount of blood present in the first few days in the feces, and second, in that the patient frequently developed the physical signs of pneumonia, a pneumonia which ran a prolonged course, was accompanied by citron-colored sputum, and terminated by lysis. The examination of the feces microscopically and culturally brought out the fact that in all the cases there were very large numbers of streptococci, and that in those cases passing almost pure blood they were present in a great state of purity. The sputum of twenty-three cases of secondary pneumonia was examined. The microscopic appearances were uniform. In the early stages the cellular elements were few, but by the third day of the pneumonic symptoms there was a large increase consisting mainly of polymorphonuclear and endothelial cells. The organisms were mainly of the streptococcal type; sometimes they were present in practically pure culture. Blood cultures also were made in twenty out of the twenty-three cases; streptococci were obtained from the blood culture. It could, as a rule, be recovered up till the sixth day of the illness. All the patients gave a history of having drunk shell-hole water, the diarrheal symptoms ensuing from one to five hours later. In an inquiry into the bacteriologic flora of such waters it was found that in twenty-eight out of forty-two specimens examined, streptococci were present in large numbers.

Susceptibility of Convalescents from Measles.—Of the 388 cases of measles analyzed by Levy, 119 had complications, a number of patients suffering from more than one. The complications of measles occurred almost exclusively among streptococcus carriers, the incidence in this group being 36.8 per cent. as contrasted with 6.4 per cent. in "clean" cases. Furthermore, the four complications noted among the noncarriers were of distinctly minor nature—two instances of acute bronchitis, one acute tonsillitis, and one cervical adenitis. Bronchopneumonia occurred forty-seven times, or in 12.1 per cent. of all cases. Fifteen, or 34 per cent., of the bronchopneumonias developed empyema. On culture, thirteen pleural fluids showed *S. hemolyticus*, one pneumococcus. From eleven specimens of pus obtained from cases of acute otitis media, *S. hemolyticus* was grown 9 times; *Staphylococcus aureus* twice. Of 326 carriers, either entering the hospital as such, or becoming infected after admission, 211, or 63.2 per cent., had no complications.

Wisconsin Medical Journal, Milwaukee

March, 1919, **7**, No. 10

Hospital Standardization. J. M. Dodd, Ashland.—p. 391.
Modern Treatment of Rectal Diseases. J. Donovan, Milwaukee.—p. 402.
Early Symptoms of Organic Brain and Cord Disease. D. W. Roberts, Milwaukee.—p. 405.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Feb. 28, 1919, **12**, Nos. 3 and 4

Mensurative Study of Cysts of Entameba Coli. J. R. Matthews.—p. 259.
Strongylidae in Horses. W. Yorke and J. W. S. Macfie.—p. 273.
Habits of Glossina Tabaniformis, Westw. J. Schwetz.—p. 279.
New West African Ceratopogoninae. H. F. Carter.—p. 289.
*Treatment of Malaria: XVII. Value of Continuous and Interrupted Quinin Administration in Simple Tertian Malaria. J. W. W. Stephens, W. Yorke, B. Blacklock, J. W. S. Macfie, C. F. Cooper and H. F. Carter.—p. 303.
Id. XIX. Intravenous Injections of Disodoluargol in Simple Tertian Malaria.—p. 339.
*Id. XX. Intramuscular Injections of Collosol Manganese in Simple Tertian Malaria.—p. 345.
*Id. XXI. Arsenic in Simple Tertian Malaria.—p. 371.
*Spread and Incidence of Intestinal Protozoal Infections in Population of Great Britain. J. R. Matthews and A. M. Smith.—pp. 349 and 361.

Quinin in Malaria.—The authors experimented with the administration of 30 and 90 grains of quinin per week, given in equal doses daily for six days and in two doses, one on each of two consecutive days. They found that, given a total weekly dose of quinin, it is better as a palliative to divide it into two equal parts and administer one on each of two consecutive days, than to divide it into six equal parts and administer one on each of six consecutive days; in other words, as a palliative, interrupted is preferable to continuous quinin treatment in simple tertian malaria.

Intramuscular Injections of Collosol Manganese in Malaria.—This preparation was tried in fifteen cases. The drug was injected intramuscularly, 1 c.c. on each of two consecutive days in fourteen cases and 1 c.c. on each of three consecutive days in one case. The drug was of no value.

Arsenic in Malaria.—The authors have found that the daily administration of arsenic, or of arsenic and strychnin, in small doses (15 minims) in combination with quinin (5 grains) is not more effective than the same dose of quinin alone. As a palliative, liquor arsenicalis (B. P.) 30 minims daily, appeared to exert a definite control of the temperature, the average weekly number of cases in which there were parasitic febrile relapses being only 3.8 per cent. of cases treated; on the contrary, however, it failed in many cases to keep the cutaneous blood free from parasites, the average weekly number of cases in which there were parasitic relapses (febrile and nonfebrile) being 28.1 per cent. of cases treated. As a curative, the treatment was practically valueless, being followed by 85 per cent. of relapses. The same treatment, however, with two initial injections of quinin dihydrochlorid, 15 grains, gave very different results. The average weekly number of cases in which there were parasitic febrile relapses was 2.7 per cent. of cases treated; but in contradistinction to the previous treatment, the average weekly number of cases in which there were parasitic relapses (febrile and nonfebrile) was only 3.9 per cent. of cases treated. Furthermore, as a curative, the result of this treatment presented a striking contrast to that of the previous one, only 12.5 per cent. of cases relapsing within the observation period of sixty days after treatment.

Intestinal Protozoal Infections in Population of Great Britain.—Among 450 civilians (men, women and children) examined by Matthews and Smith, seven, or 1.5 per cent., were found by one examination per case to be carriers of

Endameba histolytica. Among 1,098 healthy young recruits, one examination revealed sixty-two, or 5.6 per cent., to be infected with *E. histolytica.* The nonpathogenic intestinal protozoa (*E. coli, E. nana, Giardia* and *Chilomastix*) are commonly distributed in the population of Great Britain. Stools were examined by Matthews and Smith for intestinal protozoa from 548 children under 12 years of age. *E. histolytica* was found in 1.8 per cent., and the commonest protozoon was *G. intestinalis,* found in 14 per cent. Children become infected soon after they are 1 year old and from this age onward all the common intestinal protozoa are found, irrespective of age or sex. The results have been compared with those from a similar population of adults and it has been observed that *G. intestinalis* in particular is much more common among children. Investigations of whole families of which one member was known to be infected showed that in certain families infections were much more common than in the general population.

Archives of Radiology and Electrotherapy, London

February, 1919, **23**, No. 9

Method of Obtaining Static Electricity from Induction Coil, and New Methods for Application of Static and High-Frequency Currents. G. G. Blake.—p. 271.
Radioscopic Method for Estimating Hypertrophy of Left Ventricle. J. M. W. Morrison and L. White.—p. 282.
Protection in Diagnostic Work: Effects of Scattered and Secondary Rays. F. Hernaman-Johnson.—p. 290.

British Medical Journal, London

March 8, 1919, **2**, No. 3036

*Hyperglycemia and Glycosuria. H. J. Hamburger.—p. 267.
Influenza and Pneumonia. F. L. Armitage.—p. 272.
*Febrile Acidosis in Scarlet Fever in Children. R. E. Thomas.—p. 274.
National Medical Treatment. W. J. Howarth and B. A. Richmond.—p. 274.

Hyperglycemia and Glycosuria.—Primarily Hamburger's work was done to ascertain whether or not the kidney allowed free glucose to pass through. He found that the glomerular membrane has the power of retaining free glucose, and that this power is governed by the influence of the chemical composition of the perfusion liquid on the glomerular epithelium. If this is the usual Ringer's solution, composed of sodium chlorid, 0.6 per cent.; calcium chlorid, 0.0075 per cent.; potassium chlorid, 0.01 per cent., and sodium bicarbonate, 0.02 per cent., and to it has been added 0.1 per cent. glucose, then a urine containing 0.07 per cent. glucose is excreted, 0.03 per cent. thus being retained. In the perfusion liquid the quantities of potassium and calcium with respect to each other can be altered in such a way that the retentive power need not be influenced by it. In such a case they balance each other. Instead of using potassium, this balancing can also be effected by means of radium and uranium, with doses which are determined not by equivalence in a chemical sense, but by the degree of radioactivity. The subjection of the kidney to mesothorium rays can be substituted for potassium. If the concentration of sodium bicarbonate in the Ringer's solution is raised from 0.02 to 0.285 per cent., the quantity which is present in the frog's serum, then the kidney can retain from the sugar-holding perfusion liquid more than 0.03 per cent. The artificial "urine" becomes totally free from sugar.

The results lay bare a new form of permeability—one, namely, in which cells under physiologic conditions, although quite permeable to salts, are yet impermeable to glucose, which like these is also a crystalline. The structure or configuration of the glucose molecule is responsible. The isomeric fructose and the stereo-isomeric mannose and galactose, and even the levorotary glucose (*l*-glucose) pass through the glomerular membrane. Thus the living glomerular membrane is able to distinguish normal glucose from other sugars. When, besides glucose (dextrose), fructose (levulose) occurs in the perfusion liquid, only the levulose is let through. The two sugars are separated as by a filter. What is true for a mixture of levulose and dextrose applies also to a mixture of dextrose and lactose. The lactose passes completely into the urine, the glucose is retained by the glomerular epithelium as though there were no lactose present.

Regarding the relation between glycosuria and hyperglycemia, the experiments have made clear the following: If there is a hyperglycemia of a certain degree, then the glomerular epithelium sickens and allows the glucose to pass through. The higher the degree of hyperglycemia, the stronger the permeability becomes. The toleration of the glomerular membrane for the sugar concentrations lying above the normal appears to be different for different individuals.

Febrile Acidosis in Scarlet Fever.—Thomas examined daily the urine of seven consecutive cases of moderate attacks of scarlet fever, estimating the acidity, the proportion of urea and ammonia-amido nitrogen and testing for acetones and diacetic acid, with the following results: (1) acidosis lasting from three to twelve days, reaching its maximum on the third to fifth day of the disease; (2) acetone and diacetic acid not always, though generally present; (3) urine not alkaline during administration of sodium bicarbonate from 10 to 15 grains every four hours; (4) one return of acetone, increase in ammonia nitrogen from 1.7 to 6.3 per cent., and rise in acidity from 2 to 78 per cent. tenth-normal acid, after halving the dose of soda; (5) development of nephritis later in the two patients who showed the most severe acidosis. As sodium bicarbonate did good in moderate and severe cases, Thomas has made it a routine for all with satisfactory results. It is given for a week to ten days to all children who have scarlet fever, the dose being regulated by the reaction of the urine.

Edinburgh Medical Journal

March, 1919, **22**, No. 3

Position of Physiology in Medicine. E. S. Schafer.—p. 144.
Malaria in Macedonia. A. Goodall.—p. 156.
Three Cases of Quinin Amblyopia. H. M. Traquair.—p. 169.
Training Student of Medicine: Teaching Dermatology. N. Walker.—p. 173.
Id. F. Gardiner.—p. 177.
Id. R. C. Low.—p. 178.
Suggestions for Utilization of Poor Law Hospital for Teaching Medical Students. T. Y. Finlay.—p. 181.

Indian Medical Gazette, Calcutta

February, 1919, **54**, No. 2

Charaka Samhita. W. D. Sutherland.—p. 41.
*New Technic of Heart Massage with Case of Resuscitation. T. C. Bost.—p. 50.
*Heart Massage in Chloroform Poisoning. D. J. Harries.—p. 53.
War Injuries of Peripheral Nerves. T. W. Foulkes.—p. 54.
Cellulose and Chronic Constipation. R. F. E. Austin.—p. 56.
Ether as Anesthetic. J. B. H. Holroyd.—p. 60.

Heart Massage for Resuscitation.—Bost makes an abdominal incision 4 inches long in the median line, extending from above the umbilicus well up into the xiphosternal notch. The left costal cartilages are well retracted, bringing the anterior diaphragmatic insertion will into view. A 2-inch incision, beginning 1 inch to the left of the median line carried outward behind the costal margin, cuts the fibers of the diaphragm near their insertion. A blunt instrument pushed in opens the pleural cavity, and the opening is rapidly dilated with two or three fingers of the right hand, so that the whole hand can then be passed into the thoracic cavity anterior to the pericardium. The hand is passed upward, the thumb behind the sternum and the fingers embracing the entire organ in the pericardium. The thumb compresses the right auricle and ventricle, and the base of the heart is effectively massaged. No vessels are injured in this incision, as the superior epigastric artery is internal to the incision and passes into the rectus muscle, and the musculophrenic branch enters the diaphragm through the cellular tissue behind the eighth or ninth costal cartilages and passes backward, deeper than the incision. The liver and stomach, even if prominent, offer no obstruction to this route, nor is the pericardium in danger of being opened. During the massage the parts can be pressed round the wrist of the operator so that air is not sucked in, and there is no tendency to collapse of the lung.

Heart Massage in Chloroform Poisoning.—The patient collapsed before the operation—a laparotomy—was begun. The anesthesia was complete. The heart had ceased beating. A 3-inch median incision was made above the umbilicus.

Then, with the left hand over the cardiac area externally, and the right on the under surface of the cardiac portion of the diaphragm, Harries submitted the heart to a series of rapid squeezes between the two hands at the rate of about fifty to sixty a minute. After the tenth compression the heart started beating. It went on for thirty beats at the rate of 90 to 100 a minute and then stopped. The squeezing was repeated, and after the fourth compression the heart again started beating—at first very irregularly, and stopping at intervals for two to three seconds. After about ten minutes of this irregularity, the heart beats and pulse started alternating, and the alternation continued until the onset of the final collapse preceding the patient's death sixteen hours later. During these procedures, Harries was impressed by the fact that the heart could not be felt through the diaphragm when it was not beating; but as soon as it commenced to beat, the cardiac impulse was much more distinctly felt than the apex beat on the chest wall. The color of the mucous membrane of the lips was restored after three to four beats of the heart, whereas the color of the peritoneum returned only after a dozen beats.

Journal of Laryngology, Rhinology, and Otology, London

March, 1919, **34**, No. 3

Mastoidectomy for Acute Suppurative Inflammation; Use of B. I. P. P. H. Tilley.—p. 73.
Two Cases with Cerebellar Symptoms. A. Campbell.—p. 76.
Tuberculomas of Nose: Two Cases. J. Harper.—p. 81.
Three Cases of Accessory Nasal Sinus Suppuration. W. M. Mollison.—p. 82.

Journal of State Medicine, London

December, 1918, **26**, No. 12

Housing Reform. A. M. Williamson.—p. 353.

Journal of Tropical Medicine and Hygiene, London

March 1, 1919, **22**, No. 5

*Treatment of Leprosy. A. Connal.—p. 37.

Treatment of Leprosy.—In the treatment of leprosy at the Yaba Leper Asylum, Lagos, Nigeria, chaulmoogra oil has been in constant use; nastin has been employed for four years; Heiser's combination of chaulmoogra oil with camphorated oil and resorcin is given in certain cases, and sodium gynocardate was tried, the latter half of 1917. Connal says that it is difficult to reach a true estimate of the value of any one drug in the treatment of leprosy. A perusal of the case books leaves the impression that none of the four named methods of treatment is specific. Relapses have occurred in treated and untreated cases. Definite improvement has been noted in the entire absence of drug administration. The negro leper is prone to alternating optimism and pessimism. He eagerly welcomes a new therapeutic measure and tends to exaggerate any beneficial results, but despondency sets in sooner or later, when he may refuse further dosage. A history of twenty patients is given to demonstrate the results of the various forms of treatment.

Medical Journal of Australia, Sydney

Feb. 8, 1919, **1**, No. 6

Health of the State. J. Morton.—p. 109.
Case of Lacerated Vagina During Coitus. E. H. Stokes.—p. 111.

Feb. 22, 1919, **1**, No. 8

Influenza Epidemic in Dunedin, New Zealand.—F. Fitchett and J. T. Bowie.—p. 146.
New Operation for Procidentia Uteri in Old. A. N. McArthur.——p. 149.
Dermatitis Medicamentosa Due to Antipyrin with Persistent Pigmentation. N. Paul.—p. 151.

March 1, 1919, **1**, No. 9

Treatment of Hyperthyroidism by Roentgen Rays. H. Harris.—p. 167.
Improved Operation for Large Hydatid Cyst of Lung. C. E. Corlette.—p. 168.
National Medical Service. J. Corbin.—p. 170.
Two Cases of Lacerated Vagina During Coitus. C. E. D'Arcy.—p. 172.
Mental Factor in Neuroses of War. R. G. Gordon.—p. 81.
Amnesia and Stupor. A. F. Hurst.—p. 87.
Diagnosis of Hysterical Ptosis. A. F. Hurst.—p. 102.
Abdominal Reflex in Hysteria. A. F. Hurst.—p. 103.
Occurrence of Babinski's "Fan Sign" in Hysterical Paraplegia. J. F. Venables.—p. 105.
Nature of Hysteria and Hysterical Symptoms. A. F. Hurst.—p. 106.
New Method of Reinforcing Knee-Jerk. A. F. Hurst.—p. 111.

Medical Journal of South Africa, Johannesburg

November, 1918, **14**, No. 4

Bacteriology of Epidemic Influenza on Witwatersrand. F. S. Lister.—p. 290.
Seborrhea; Seborrheic Eczema. L. E. Ellis.—p. 293.
Two Cases of Anthrax Treated with Arsphenamin. A. Pijper.—p. 298.
Living Filaria Removed from Eyelid. A. T. Thurston.—p. 299.

December, 1918, **14**, No. 5

Epidemic Influenza of Pulmonary Type. H. A. Loeser.—p. 322.
Pediatric Notes on Influenza Epidemic. C. L. Leipoldt.—p. 327.
Examination of Cerebrospinal Fluid. W. M. Montgomery.—p. 331.

Seale Hayne Neurological Studies, London

September, 1918, **1**, No. 2

Tremors in Soldiers. A. F. Hurst.—p. 53.
Responsibility of Medical Officers in Development of Hysterical Symptoms in Soldiers. J. L. M. Symns.—p. 56.
Bent Back of Soldiers. A. F. Hurst.—p. 60.
War Neuroses Seen During a Week's Experience at Seale Hayne Military Hospital. S. H. Wilkinson.—p. 67.
*Hysterical Hiccup. A. F. Hurst.—p. 71.
*Hysterical Left Facial Paralysis, Right Facial Spasm, Left Ptosis, Strabismus, Aphonia, Dysarthria, Paralysis of Tongue, Paralysis of Right Arm and Both Legs and Amblyopia Following Gassing.

Hysterical Hiccup.—The case cited by Hurst was of thirteen months' duration. It was associated with hysterical monoplegia and talipes of twenty months' duration, and was cured by suggestion during intoxication with bromid.

Hysterical Left Facial Paralysis, etc.—All of the symptoms in this case were rapidly cured by persuasion and reeducation. Hurst mentions the fact that this case is of special interest as two of the hysterical symptoms showed signs which are generally supposed to indicate organic disease, the facial paralysis involving the platysma muscle and the left-sided ptosis being accompanied by overaction of the frontalis. Any doubt which their presence may have raised in the diagnosis at once disappeared when rapid recovery occurred by pure psychotherapy.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 13, 1918, **42**, No. 35

*Induced Convergence of Eyeballs. H. P. Descomps, P. Merle and P. Quercy.—p. 1155.
*Tuberculous Endocarditis. H. Barbier.—p. 1159.
*Meningeal Hemorrhages in Typhoid. Sergent and Bertrand.—p. 1162.
Vaccine Therapy of Influenza. H. Philippon.—p. 1163.
*Parotitis in Soldiers. G. Railliet.—p. 1165; Id.—p. 1168.
Colloidal Silver by the Mouth. A. Challamel.—p. 1171.
*Peptic Ulcer after Gastro-Enterostomy. Carnot, Froussard and de Martel.—p. 1173.

Induced Convergence of Eyeball After Aerial Shock.—The uncontrollable adduction of one or both eyeballs during rotation tests is frequently associated with relics of paresis of the sixth pair. It may also be observed with injury of the eighth pair. Four cases are described with evident lesions in the vestibular or cochlear domain. The convergence of the eyeballs can thus be regarded as an indirect sign of a lesion in the apparatus of hearing, as also of injury of the oculomotor centers or of the centrifugal branch of the reflex arc affecting the motor nerves of the eye. It is a phenomenon that interests not only the neurologist but also eye and ear specialists.

Tuberculous Endocarditis.—In Barbier's case, the girl of 13 had presented severe asystole. The first signs of trouble had been noted five or six months before the fatal termination. There was no history of rheumatism, but necropsy revealed a fibrous process in the endocardium that had entailed mitral insufficiency. Other valves were also involved. The assumed tuberculous nature of the disease was confirmed only by discovery of a tubercle in the liver. Asystole develops early with tuberculous endocarditis, and death generally occurs within the year. This is the second case he had encountered within a year.

Meningeal Hemorrhage in Typhoid.—Sergent and Bertrand report a case of typhoid in a woman of 35 in which intense headache from the first was explained by the hemorrhagic character of the cerebrospinal fluid on lumbar puncture the fourteenth day, and again the nineteenth day. The fluid seemed otherwise normal and smooth recovery followed. They have not found any cases resembling this on record. Meningitis is comparatively common in typhoid, but simple hemorrhage seems to be exceptional.

Parotitis in Soldiers.—Railliet quotes certain physicians, in charge of wards to which men with mumps are sent, to the effect that many of the mumps suspects do not have mumps in fact, but acquire it in the mumps ward. The differential diagnosis is sometimes extremely difficult, as chronic or acute enlargement of the parotid glands is common, and is liable to be mistaken for mumps. Some of the men in this group say that the other members of their family have the same "large cheeks." Among the forty-three men with habitually large parotid glands, three had actually enormous enlargements; fifteen were farm workers and in about 16 per cent. there was a suspicion of lead poisoning.

During an epidemic of mumps the troops were gassed repeatedly with mustard gas, and this in 4 or 5 per cent. of the cases caused the parotid glands to become enlarged and tender. The physicians were unable to distinguish between the mumps cases and the "yperitic parotitis" except by the absence of contagion from the latter and the absence of orchitis, along with the other lesions from the mustard gas. The yperitic parotitis passed off harmlessly in about eight days.

Peptic Ulcer After Gastro-Enterostomy.—Carnot and his co-workers operated in a case of fecaloid vomiting in a man who had had a gastro-enterostomy done two years before. The laparotomy revealed a peptic ulcer with a fistula between the jejunum and the colon, close to the gastro-enterostomy opening. The ulcer had bored a communication between the small and the large intestine, and the whole mass of the adherent stomach and small and large intestine was resected in one block. The findings in this case, as they explain, confirm the peptic nature of ulcer in stomach, jejunum or duodenum, from lack of the physiologic immediate saturation of the gastric juice. In every case of fecaloid vomiting an abnormal communication between the stomach and the colon should be suspected; diarrhea favors the fecaloid vomiting. This case teaches anew the importance of keeping medical oversight of gastro-enterostomy patients as the abnormal passage of gastric juice directly into the jejunum is liable to set up ulceration at any time.

Journal de Médecine de Bordeaux

Feb. 28, 1919, **90**, No. 4

*Infant Morbidity at Bordeaux. A. Moussous.—p. 67.
*Physiotherapy of Sciatica. A. Fraikin.—p. 70.

Infant Morbidity During the War.—In resuming his course in pediatrics after the interruption of the war, Moussous comments on the effects of war deprivations on infants and those to be born soon. Among other points he emphasizes is that chilling of a new-born infant damages the fragile red corpuscles, and the laking of the blood may become manifest in the form of jaundice. Other injuries from cold explain the high mortality among young infants this last year owing to the lack of adequate heating of the homes, especially of the working classes. A good supply of milk has been available for infants at Paris all through the war, as the authorities in preparing for a siege provided an ample dairy herd. At Bordeaux the death rate among infants has been so high that for the last few months the authorities have admitted the mothers to the hospitals when nurslings have to be taken there.

Physiotherapy of Sciatica.—Fraikin reports the application of electricity, superheated air and massage, mechanotherapy and retraining of the limb in seventy-six cases of sciatic neuralgia. Three are still under treatment; forty-four were cured and eleven very much improved, while all were improved to some extent. He urges application of physiotherapy from the start instead of wasting time on drugs alone. This would prevent the sciatica from becoming so firmly established and tenacious, and would ward off neuritis and atrophy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 15, 1919, **49**, No. 7

*Influenza. II. H. Sahli.—p. 193.

Influenza.—Sahli describes the experiences with prophylactic measures at Berne. There are so many objections to masks that he does not regard them as feasible. One reason is that the conjunctiva may be a portal of entry for the germs, and another reason is that the air being forced in and out makes strong currents which sweep the bacteria along. None of the commercial masks tested were found impervious to microbes. It would be more effectual to have the influenza patient wear the mask, to protect others against him, but he would suffer more from it than others, as his respiration is already hampered by the disease. Sahli remarks, however, that the physician can protect himself against the coughing patient by having the attendant cover the patient's face with a towel or the drawn up flap of the shirt while he is examining the chest. Actual tests have shown that this precaution protects against droplet infection as effectually as the usual mask. In examining the throat, protecting goggles are worn as for diphtheria patients, and the mouth and nose are protected by the hand. All these measures have an educative influence on the patient, without frightening him as would a masked physician. By the force of example, the importance of care to prevent infection in expectoration and coughing is impressed on him. Sahli's assumption of a complex virus has already been mentioned in these columns, March 1, 1919, p. 687.

He declares that all the testimony speaks in favor of the production of immunity by an attack of influenza, especially the frequent drop of the temperature and the accompanying arrest of the lung or bronchial process. This indicates the sudden production of combative forces which annul the toxins. The fact that immunization is not absolute in every one has its counterpart in other infectious diseases. The flaring up of the influenza again when it had apparently just subsided is a further convincing proof of the influence of the immunization, as it demonstrates that the active virus was still present in the body before the relapse, but that it had been kept under control by antibodies for a time, but had finally escaped from under this control. The whole epidemiology of influenza speaks for at least partial immunization by the pandemics and the growing up of a new and susceptible generation. Between the pandemics, the influenza bacillus lives as a saprophyte, waiting for its hour to strike again. It perishes rapidly in the external world, as also apparently the *pneumococcus* and the streptococcus which form with it the complex virus. Age in itself, in addition, may protect against influenza; the elderly and infants seem to escape. Sahli adds that the cases of catarrhal fever, etc., falsely labeled "grippe," have contributed to prevent the due realization of the actual immunity conferred by influenza. It is possible that those who escape influenza during a pandemic have been imperceptibly "vaccinated" during the epidemic by inhalation of minute doses of the virus, and thus have become relatively immunized by this "inhalation vaccine."

Policlinico, Rome

Feb. 9, 1919, **26**, No. 6

*Nervous Manifestations of Influenza. G. Dragotti.—p. 161.
*Treatment of Influenza. C. Bassoni.—p. 167.
*Quinin in Prevention of Influenza. G. Betti.—p. 169.
A. Benedictus, Venice, ? -1512. G. Bilancioni.—p. 173.
*Latent Cysticercosis. P. De Tommasi.—p. 174.

Nervous Manifestations of Influenza.—Dragotti reviews the multiform organic and functional central and peripheral nervous manifestations of influenza, a long list, to which he adds epilepsy, chorea, hysteria and neurasthenia as sequelae that have been observed. Cases are known also in which exophthalmic goiter, myxedema or *delirium tremens* have followed on influenza. The influenzal psychoses of the acute period are generally of the amentia type, and as a rule subside in two or three weeks. The psychosis, however, may pass into a state of mental collapse, with stupor which may persist and become actual dementia. In other cases a neurasthenic condition, with depression and restlessness, sets up a vicious circle as the appetite is lost and the nutrition suffers. This state may keep up a longer or shorter time or even terminate in dementia. It is to this class of cases that can be attributed the large number of suicides during the pandemic of influenza. Mania developing during convalescence, about a week after defervescence, generally has a favorable prognosis. A latent tendency to progressive paralysis, dementia praecox, or a manic-depressive psychosis may be roused to activity by intercurrent influenza, or an existent phase aggravated.

Influenza.—Bassoni remarks that influenza is still present in many Italian cities, still claiming numerous victims. In the cases with complications in lungs and bronchi which do not clear up rapidly, he has found very useful injections of 2 c.c. of 10 per cent. camphorated oil with addition of 0.10 gm. guaiacol, one at 10 a. m. and one at 5 p. m. Several case reports show the prompt benefit even when the bronchopneumonia was due to secondary infection, or the case was simple influenza. The effect in his cases was so good that he is inclined to assume a specific action on the disease. The fever drops and all the symptoms abate. He supplements the injections with revulsion to the chest, proctoclysis, digitalis, or other measures as indicated. The diuretic action of the proctoclysis aids in clearing out toxins. On account of the minute doses, this treatment is absolutely harmless, he declares, and he knows of no contraindications.

Quinin in Prophylaxis of Influenza.—Betti relates that among the 1,100 malarial soldiers taking treatment at the malaria hospital on Lake Como, only five contracted influenza and they had it in a mild form.

Cysticercosis in Young Girl.—De Tommasi reports that an apparently healthy girl required amputation on account of a traumatic fracture which had refused to heal and the temperature kept high. At the amputation the subcutaneous tissue was found studded with vesicles of *Tenia solium.* There had been no symptoms at any time indicating the presence of the tenia or cysticercus.

February, 1919, **26**, Medical Section No. 2

*Adiposis Dolorosa. E. Mingazzini.—p. 49.
*Non-Nephritic Albuminurias. I. Romanelli.—p. 62.

Adiposis Dolorosa.—Mingazzini reports the case of a man of 29 who in the course of a thyroid adenoma developed painful lipomatous nodules at various points, along with slight asthenia, irritability and depression. After excision of the tumor in the thyroid, these symptoms materially retrogressed. In the 100 cases of adiposis dolorosa in women on record the thyroid was incriminated in 19, the pituitary in 5, and the ovaries in 5. No appreciable cause could be detected in 70 cases. In the 21 cases on record in men, the thyroid was incriminated in only 2, the pituitary in 4, both together in 3 and the testicle in one. No cause was apparent in 11. In the case here reported, there was a limited zone of cells in the thyroid with a chromaffin character, the altered secretion of which has been regarded as one of the contributing causes of the disease. Three pages of closely printed bibliography conclude this review of the connection between the endocrine system and adiposis dolorosa.

Non-Nephritic Albuminuria.—Romanelli emphasizes the importance of ascertaining the exact cause of the albuminuria. When the patient is restricted to a milk diet, he warns that it should never be kept up longer than two or three weeks. Bed rest is indispensable in some cases, but Teissier found in one case that even four months of bed rest failed to modify the orthostatic albuminuria. Moderate exercise and hygiene, avoidance of constricting belts, garters or corset are necessary and studying may have to be stopped on account of the mental strain and fatigue. Tonics, out of door life or hydrotherapy may be indicated, but in any event medical supervision must be maintained. The prognosis of albuminuria accompanying nervous and mental disease or emotional stress depends on the fundamental disturbance. When it is due to functional nervous disturbance it may readily subside but may reappear with equal readiness. This form of albuminuria should not be accepted in the diagnosis until all other causes for it have been eliminated. A candidate for life insurance can be accepted, but the extra risk from the lesser resisting power of the kidneys must be borne in mind. Among 308 obese persons he found albuminuria in 20 per cent. Traces of albumin up to 0.5 per thousand are common in the obese, even in those apparently free from gout, arteriosclerosis, alcoholism and hypothyroidism. In a group of 407 insured persons weighing 10 kg. or more above normal and with girth over six tenths of the height, the average age at death was 47 years and 10 months, while the other insured died at the average age of 50 years and 1 month. The proportional mortality from kidney disease in all the insured averaged 9 while it was 13.8 among the obese. He analyzes conditions further with albuminuria in the various constitutional and infectious diseases and intoxications, acute and chronic, and in the pregnant, and discusses the various views as to acceptance for life insurance. A questionnaire was sent to fifty different life insurance companies, and thirty-one described their practice. Romanelli's extensive experience in this line has convinced him that candidates with albuminuria can be accepted, as he explains, with an extra premium varying with the type of the albuminuria. This extra premium can be very small with the albuminuria of puberty, after muscular exertion, the orthostatic, and the lordotic forms, with the maximal premium for albuminuria from arteriosclerosis. The family history, longevity, kidney disease, the personal history, constitution (obesity, extreme thinness), and the blood pressure are all important. In 295 fatal cases of nephritis among the insured in one company, 54 died between 50 and 55; 40 between 61 and 65, and 20 between 66 and 70, with 4 over 75 and 4 under 30. In 99 cases the policy had run from one to five years; in 68 from ten to fifteen years; in 63 from sixteen to thirty, and in 4 for over thirty years. The general statistics give the age of the greatest mortality from kidney disease as between 51 and 55.

Riforma Medica, Naples

Feb. 15, 1919, **35**, No. 7

*Influenza at Parma. E. Ruggeri.—p. 126.
*Referendum on Influenza. P. Guizzetti.—p. 132.
The Latin Spirit and the Art of Surgery. J. L. Faure.—p. 140.
Some of the Problems of the Day. A. Ferrannini.—p. 141.

Influenza.—Ruggeri concludes his long study of influenza by emphasizing the rarity of the influenza bacillus and the frequency of a mixed virus. This association of bacteria explains the proteiform set of symptoms, the bronchorrhagia and characteristic changes in the physicochemical properties of the blood which he describes in detail. The cases with the diplococcus and staphylococcus were the graver forms, and it was in these cases that the antihemolytic power of the serum was lowest, as also the sensibility of the corpuscles.

Influenza.—In continuing this referendum, Guizzetti, describing the epidemic at Parma, states that the influenza bacillus was found in the bronchi in fourteen of twenty-seven cadavers, but none could be detected anywhere in eleven. In some cases he found an infarct in one lung, evidently from thrombosis, the result of secondary infections, to which also most of the pulmonary lesions can be ascribed. In contrast to the 1890 epidemic, he was impressed with the present marked tendency to hemorrhages in the air passages and the comparative rarity of nervous prostration following the disease.

Archivos Latino-Am. de Pediatria, Buenos Aires

September-October, 1918, **12**, No. 5

*Child Welfare Work in Brazil. C. Ferreira.—p. 405.
*Ataxia with Spasmophilia. F. de la Torre.—p. 430.
Iodized Vaccine Therapy of Typhoid in Children. R. Berro.—p. 434.
Deformity of Heart and Hemiplegia with Mongolian Idiocy. M. A. Ugón.—p. 439.
*Typhoid Spondylitis. V. Zerbino.—p. 442.
Subacute Meningitis. J. Bonaba.—p. 450.
Acquired Syphilis in Child of Two. C. Pelford.—p. 452.

Child Welfare Work in Brazil.—Ferreira's article is the official report for 1917 of the section for protection of young children in the public health service of the state of S. Paulo, Brazil. He laments that there is only one *consultorio* for nurslings while Montevideo has seven, although the population is smaller. S. Paulo has a high birth rate, 36 per thousand, and it should have a *consultorio* for each 100,000, which would give it five. He expatiates on the fine results attained with the prizes given for the most robust children and for attendance at the infant consultations. Prizes to nursing mothers are particularly useful, and should form part of the routine of every infants' dispensary or *consultorio*.

Ataxia with Spasmophilia.—The boy of 3 had been having for nearly a month from one to thirteen attacks daily of clonic convulsions beginning in the face and extending to the extremities. The speech was peculiar, resembling the slow scanning speech of sclerosis in patches, and the incoordination in the voluntary movements was extreme. Treatment was begun in March, 1916, with 20 per cent. magnesium sulphate by subcutaneous injection, with chloral by the mouth and in enemas. In the first two weeks the convulsions became more numerous, up to thirty a day. Then they gradually declined and he has had none since May, 1916, and has seemed normal, even robust, during the years since. No details as to dosage or length of course of treatment are

hoid Spondylitis.—Zerbino remarks that the rarity of oid spondylitis confirms the truth of the saying that we find only what we look for, and we look for only what we know about. This typhoid spondylitis is encountered usually in mild or moderate cases of typhoid. The onset is sudden and the course rapidly progressive. The predominant symptom is the acute, violent pain, continuous, with paroxysmal exacerbations, generally localized in the lumbar regions, radiating to the abdominal wall and legs. It is often ascribed to overexertion or chilling during convalescence. It develops during the typhoid or convalescence or a few weeks or months after recovery. Pressure on the vertebrae, especially on the sides and front, brings on the pain. There may be a swelling in the lumbar region and even suppuration. In some cases girdle pains, sciatic neuralgia and muscular paresis complicate the clinical picture, with incontinence. The Kernig and Lasègue signs are common but not the Babinski. The course is slow but progressive. Repose for two or three months generally brings the subsidence of the symptoms, although the affection may keep up for a year or more with intervals of latency. Lumbar puncture shows the fluid under high tension but it is limpid, with high albumin content but no or very slight lymphocytosis during the acute phase. His patient was a girl of 12 who had had typhoid two months before and complained of pains and inability to use her legs. The lumbar pains developed early in convalescence. The pain kept her awake at night and there was soon incontinence of urine. No treatment was given but bed rest, and complete recovery ensued. On getting up the twentieth day, the pain returned but subsided under two more days of bed rest. After the end of the month she was allowed to get up for a time every day, and the ninth week was up all the time as the spine was apparently normal. The diagnosis was confirmed by the history of typhoid, the positive seroreaction and the favorable course.

Brazil Medico, Rio de Janeiro

Jan. 18, 1919, 33, No. 3

*Acquired Feeblemindedness. H. de B. B. Roxo.—p. 17. Conc'n.
*Syphilitic Trigeminal Neuralgia. Brito e Silva.—p. 19.
Sputum-Vaccine Therapy of Influenza. U. Paranhos.—p. 20.

Acquired Mental Impairment.—Roxo declares that the symptoms of dementia praecox are liable to subside under treatment but the mind is left impaired, and he always warns the family of this contingency. Infectious diseases may leave the patient less intelligent than he was before. In some cases of postpuerperal psychoses the patients themselves realize that their mental capacity is somewhat reduced. In another case this mental impairment followed whooping cough. Under treatment for syphilis, certain cases of delirium which seemed to be permanent have retrogressed but some mental impairment is always left. Small doses of neoarsphenamin have proved exceptionally useful in these conditions. It seems to free the nerve cells from the toxin and tone them up. Sodium nucleinate and sodium arseniate seem to have a similar action, combating the toxic disturbance in the metabolism of the nerve cells. These or their equivalent or an organ extract should be tried in all cases of acquired mental impairment, from the toxic products resulting from some upset in the balance of the endocrine system or toxi-infection of other nature.

Syphilitic Trigeminal Neuralgia, etc.—Brito e Silva discusses the various manifestations from the fifth nerve for which syphilis may be responsible. The neuralgia grows worse at night, and this, in connection with the inefficacy of drugs which usually relieve neuralgia, point to syphilis, and this presumption is confirmed by the rapid cure under specific treatment.

Gaceta Medica de Caracas

Jan. 15, 1919, 26, No. 1

*Oxytocic Action of *Quinin.* L. Razetti and others.—p. 1.

Oxytocic Action of Quinin.—Razetti publishes an appeal to physicians practicing in malarial regions asking whether they have given quinin to pregnant women, and whether they had noted any oxytocic action from it during parturition, and whether they attribute any abortions or premature deliveries which they may have observed to the malaria or to the quinin. Ayala says that during his sixteen years of practice in a malarial region he gave quinin to pregnant women and never noted any elective action on the quiescent uterus. When the uterus is already contracting, he thinks that quinin tends to make the contractions more vigorous. Razetti is an obstetrician in a malarial region, and his experience is against the assumption of any oxytocic action by quinin at any time. He is convinced that others who state the contrary have mistaken the abortive influence of the malarial, typhoid or influenza infection for the action of the quinin. When there are signs of impending abortion from the influence of malaria he gives quinin freely, as this as yet is the only means to dominate the malaria, the true cause of the abortion. Ruiz is convinced that nothing but the quinin was responsible for the abortion in a case he describes in which a young and robust woman, four or five months pregnant, contracted malaria on a trip, but the fever was not high, and treatment was begun at once. A few hours after she had been given one or two large doses of quinin, labor pains and vaginal hemorrhage indicated impending abortion. Abortion is comparatively common in malaria, typhoid, etc., when the disease is well under way, but never in the incipiency of the disease. Hence he reiterates that we must accept a possible oxytocic action in this case and in certain women. Machado, on the other hand, from fifty years of practice, including fifteen in a hotbed of malaria, insists that it is impossible for quinin to have any oxytocic action as he always gave it freely regardless of pregnancy and impending abortions, and never had to regret having done so.

Jan. 31, 1919, 26, No. 2

*Influenza at Caracas. F. A. Risquez.—p. 13.
*Influenza at Barlovento. E. P. de Bellard.—p. 18.

Influenza in Venezuela.—Risquez relates that fully 75 per cent. of the 100,000 inhabitants of Caracas developed influenza in October and November. The death rate was higher than elsewhere, compared with the population, but much lower than in many places in comparison to the numbers attacked. The corresponding figures in the American army, he says, were 1.3 and 6.3 per cent., while at Caracas they were 1.4 and 1.9 per cent. He was impressed with the number of cases of relapse, the symptoms returning after three or five days of apparent recovery. These relapses occurred only in those who had got up out of bed and become chilled. He never witnessed any pulmonary complications in patients who stayed in bed three, four or five days after defervescence. He adds that as 80 or 90 per cent. of the cases run a mild course of only three days, and as the disease seems to confer immunity, and as public and individual prophylaxis is scarcely realizable, the attention must be focussed on warding off grave complications.

In de Bellard's experience in the Paez district, 63 per cent. of the inhabitants had the disease and 15 per cent. of the cases involved the lungs, with a mortality of 25 per cent. in this group. In one town, 2.31 per cent. of the inhabitants died. About 78 per cent. of the deaths were in persons under 30. The pulse in the grave cases suggested suprarenal insufficiency or resembled that of traumatic shock. An intestinal choleriform type was comparatively common. It did not respond to emetin.

Medicina Ibera, Madrid

Jan. 18, 1919, 6, No. 63

*Acute Nephritis. S. Pascual.—p. 49. Cont'n.
*Influenza. IV. R. Velasco.—p. 54.
Is Vision Possible Without Eyes? G. Beritens.—p. 55.

Acute Nephritis.—Pascual passes in review the whole field of acute nephritis from the brief and curable form manifested by albuminuria, tube casts and oliguria, as in typhoid, and the nephritis that speedily kills from anuria, as with mercuric chlorid poisoning. Tuberculous nephritis may begin with the usual onset of acute nephritis but the polyuria up to 2 or 3 liters is characteristic, and inoculation of guinea-pigs clears up all doubt. Syphilitic nephritis is distinguished by the intense albuminuria, the extensive edema and the retrogression under specific treatment. Nephritis in scarlet fever may first manifest itself with convulsions, or with intense edema or albuminuria. In a recent case of mercuric chlorid poisoning, the anuria was accompanied by coma alternating with delirium, and there was 0.3 gm. of urea per thousand in the blood. Death occurred the fifth day without edema or uremic symptoms.

Influenza.—Velasco states that metrorrhagia was noted in 62 per cent. of his cases of influenza in women. Abortion or premature delivery was common and often fatal, but the fetus was living when born. The congestion in the uterus entailed hemorrhage which acted like a foreign body, leading to contraction and expulsion of the uterus contents. He comments on the exceptionally high death rate of physicians from influenza. They come in contact with the graver cases, with the more virulent germs, and are more exposed to secondary infection than other people.

Progresos de la Clinica, Madrid

January, 1919, 7. No. 73

*Epitheliomas of the Hand. A. Piga and A. Ferrán.—p. 5.
*Oxaluria and Effects on the Nervous System. C. Juarros.—p. 21.
Vacuum Extraction of Cataract. J. S. Fernández.—p. 35.
*Induced Diplopia. J. S. Fernández.—p. 37.
Cervical Ribs. A. Perera.—p. 40.
*Eclampsia and Venesection. V. Aza.—p. 44.

Epitheliomas of the Hand.—Piga and Ferrán declare that radiotherapy has been too long neglected in treatment of epitheliomas of the hand. Surgical measures are generally advocated, but they insist that radiotherapy should be given the preference in certain cases. They review the history of such lesions from 1757 to date, and the anatomic and histologic findings, with illustrations of the normal and the pathologic details. Epithelioma is more common in men than in women, and on the back of the hand rather than on the palm. They have encountered about three in 125 cases of superficial cancer, but as a rule they are observed only in about 1 or 2 per cent. In treatment, a combination of roentgen and radium exposures and surgery has given good results in some cases. With melanic epitheliomas they advise to abstain from radiotherapy, although Béclère has reported the cure under it of a melanic sarcoma. The consensus of opinion, however, is against it. If the cancer does not show prompt improvement under the radiotherapy, they advise recourse at once to surgical measures. Electrocoagulation is contraindicated for these lesions as there is very little soft tissue in the region, and the tendons resist the procedure as they determined on the cadaver. It is also liable to make too much demands on the patients as they are usually elderly and debilitated. For this reason, also, great care must be taken not to allow the dressing to compress or constrict the parts too much. They warn further that every suspicious wart on the hands should be submitted to radiotherapy. They append considerable bibliography.

Oxaluria.—Juarros describes ten cases in which neurasthenia or other nervous symptoms accompanied oxaluria. The latter may be of alimentary origin, or may be a consequence of hyperchlorhydria or intestinal autointoxication or diabetes, or there may be a constitutional tendency to neuroses, aggravated by the oxaluria, or the latter can be traced to the endocrine system. His cases are examples of these different types. In the cases with hyperchlorhydria, correction of this banishes the oxaluria, and with this the nervous disturbances for which it was responsible, but nervous disturbance from other causes persists unmodified. Regulation of the diet will reveal and cure alimentary oxaluria. In two of the cases the oxaluria aggravated preexisting nervous disturbance, and these became attenuated but did not disappear altogether under treatment of the oxaluria. In one group of cases, the oxaluria induced phosphaturia. Treatment of the latter alone is futile as the oxaluria is solely to blame; it may even aggravate the oxaluria and its resulting disturbances. In treatment, foods liable to produce oxalic acid should be avoided; this includes gelatinous meats, pigs' feet, giblets and shell fish; stimulants, acids and liquor, and foods rich in oxalic acid, spinach, cress, peppers and prunes. Lime salts, he continues, promote the formation in the intestines of an insoluble calcium oxalate, while magnesium salts neutralize gastric acidity and help to keep the oxalic acid dissolved in the urine. Sodium, potassium and magnesium citrates form a double salt with calcium. He adds that acid sodium phosphate in large doses may help to dissolve oxalate calculi.

Diplopia as Optical Illusion.—Santos Fernández calls attention, with illustrations, to the peculiar illusion noticed when the tips of the fingers are touched together, held about 30 or 40 cm. from the face, and then they are gradually drawn apart a few centimeters. Between the tips there appears a mirage of the tips, partly bridging the space, and remarkable in that the tips point in opposite directions from the nearest tips.

Eclampsia and Venesection.—Aza warns that venesection is called for in eclampsia only when the blood pressure is abnormally high. Enough blood should be drawn to reduce the pressure to normal, and the physician should always consider the advisability of saline infusion afterward.

Revista de Medicina y Cirugia Practicas, Madrid

Jan. 21, 1919, 122, No. 1539

*False Cancers in Stomach and Rectum. J. Blanc Fortacin.—p. 65.
**Analgesia for Inoperable Cancer.* J. Blanc Fortacin.—p. 70.

False Cancer in Stomach and Rectum.—The symptoms and roentgen findings in Blanc Fortacin's case indicated a cancer in the lesser curvature of the man of 44. Gastrectomy was contemplated, but then the man's child was seen for the first time. The evident signs of inherited syphilis gave the clue to the father's lesion, and under specific treatment the supposed cancer disappeared completely. The Wassermann reaction confirmed the diagnosis. In another case the stenosis from a severe presumably cancerous ulcerative process in the rectum compelled an artificial anus. This relieved the rectum and it began to heal, but further symptoms seemed to show that the rectal process had invaded the adjoining abdomen. A tumor and enlarged glands could be palpated and the debility was extreme. Vigorous treatment as for syphilis gave no relief, and as a last resort heliotherapy was applied to the abdomen as this could do no harm although no benefit was anticipated from it. The tumefaction in the abdomen subsided under it while the rectal lesion continued a progressively favorable course. The abdominal tumor must have been an isolated connective tissue lesion, secondary to the rectal lesion, which probably was of tuberculous nature. The heliotherapy modified favorably the abdominal lesion by direct action and, indirectly, the rectal lesion by the tonic and antiseptic influence from the actinic rays. These assumptions were confirmed by the course of the case. The heliotherapy could not have exerted such a beneficial influence, however, if it had not been for the preceding operation to divert the feces and give the rectum a chance to heal.

Analgesia for Inoperable Cancer.—Blanc Fortacin reports prompt and durable relief of the unbearable neuralgic pains accompanying extensive pelvic cancer. He accomplished this by intraspinal injection of 2 c.c. of a 10 per cent. solution of quinin and urea hydrochlorid. During the twelve days to date of writing the relief from pains has been so great that morphin has not been required. Before this the woman had required repeated injections of morphin. The intraspinal injection induced a transient febrile reaction, with headache and vomiting, but there were no motor or vasomotor by-effects.

Jan. 28, 1919, **122**, No. 1540

*The Oculocardiac and the Nasocardiac Reflexes. M. Bañuelos and R. A. Ortiz.—p. 97.

The Oculocardiac and Nasocardiac Reflexes.—Bañuelos and Ortiz report the results of testing fourteen persons repeatedly for the oculocardiac and the nasocardiac reflexes. They found them both inconstant in the same person at different times, but the nasocardiac reflex was more constant and more pronounced than the other.

Revista Medica del Uruguay, Montevideo

November, 1918, **21**, No. 11

*Sarcoma of the Middle Ear. E. Regules (hijo) and J. M. Alonso.—p. 665.

*Paroxysmal Tachycardia and Menstruation. F. B. Del Pino.—p. 674.

Generalized Trychophytosis in Three Months Babe. J. May.—p. 680.

*Trichinosis in Man. T. Regules.—p. 681.

Coincidence of Nodose and Polymorphous Erythema. B. Vignale.—p. 693.

Sarcoma of the Middle Ear.—Regules and Alonso say that the case they report is the first case of sarcoma on record in which the diagnosis of cancer of the middle ear was made before the tumor had invaded the auditory canal or the external portion of the mastoid. With Grasser's case of endothelioma and Neumann's of metastatic adenocarcinoma, it forms a group of three cases in which the membrane was intact. Their patient was a woman of 35 with left peripheral facial paralysis and trigeminal neuralgia with total deafness on that side. There was nothing to suggest an intracranial tumor. The tympanum was red but there was no discharge. Paracentesis caused profuse hemorrhage and gave the sensation of a tumor mass filling the tympanum. The operation showed that the very small vascular tumor penetrated a dehiscence in the bone but the walls and ossicles were otherwise apparently normal. The wound was left open for the purpose of applying radium treatment. The case is compared with 38 on record, including 19 of epithelioma, 14 of sarcoma, and 2 of malignant cystadenoma. The tendency to metastasis is slight, and the lymph glands are seldom involved. Only 4 of the above cases presented manifest metastasis in cerebellum, lung or ribs or involvement of the glands.

Paroxysmal Tachycardia.—Del Pino's patient is a woman of 48 who had always been healthy until six years ago when a child in her arms was killed by a stray bullet during an Easter celebration. Soon after this, she noticed occasional attacks of tachycardia with fatigue and sense of oppression in the chest. Finally they returned regularly at each menstruation. The symptoms disappeared with the menstruation but returned each month with it. There was no fever, no tendency to goiter, but the pulse was uncountable and the heart beat 170. Treatment consisted of rest in bed during the paroxysms with digitalis to ward off dilatation of the heart during the tachycardia, supplemented with ovarian treatment.

Trichinosis.—Regules describes a case in a man of 43, healthy until recently, with seven healthy children. It is the first case recorded in Uruguay although the disease has long been known in swine there. Probably certain human cases have been labeled typhoid; the diazo reaction is positive; the spleen may or may not be enlarged, and Stäubli has reported cases with rose spots suggesting typhoid. Differential points are the edema in the face, especially in the eyelids, and the pains and intense and persisting rigidity of the muscles, the abolition of the knee-jerk, Kernig's sign, and leukocytosis, but eosinophilia of from 20 to 60 or even 80 per cent. is the most characteristic sign. Serum diagnostic tests with an alcoholic extract of trichinae from the muscles have also proved instructive.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 25, 1919, **1**, No. 4

*The Electrocardiogram After Heart has Stopped Beating. W. Einthoven and F. W. N. Hugenholtz.—p. 310.

*Epidemic Typhus on Island. Aldershoff and Broers.—p. 319.

*Multiple Cases of Mongoloid Idiocy in Family. W. M. van der Scheer.—p. 328.

Paratyphoid B or Colon Bacillus? J. S. Rudelsheim.—p. 336.

Poisoning from Homeopathic Remedy. B. D. De Haas.—p. 338.

The Electrocardiogram After the Heart Stops Beating.—Einthoven and Hugenholtz have confirmed the statement of Mines, Noyons and others to the effect that the electrocardiogram record keeps on long after the index has stopped recording any muscular contraction in the heart. This is generally accepted as testifying to the mutual independence of the muscular contraction and the electric waves, but later research here reported apparently disproves this. The electrocardiograph is extremely sensitive, while the contrivances hitherto used for recording the muscular contractions are much less sensitive, and the impulse of the heart beat is not enough to overcome the friction and inertia of the comparatively clumsy recording instrument. They give an illustrated description of a simple apparatus in which a long index is held in a copper cap soldered to a fine wire stretched taut between two thumbscrews in a small open frame. By turning the thumbscrews the index is raised or lowered, and this tightens a thread which is tied to the index, the other end of the thread fastened to the ventricle or auricle. The whole is extremely light and sensitive, with the minimum of friction and inertia. With this delicate instrument the contractions of the heart are recorded. They keep pace step by step with the electrocardiogram record, rising and falling synchronously, and with parallel intensity throughout. The research was done on the isolated frog heart under the action of different poisons or other influences. The tracings reproduced demonstrate that the mechanogram and the cardiogram are indissolubly connected with each other. A factor that may have contributed to the hitherto prevailing erroneous interpretation of the apparent arrest of the heart beat, while the electric phenomena kept on, is that, under the influence of the drugs used in the research, both the heart beat and the electric waves may have been modified so that one or the other or both may have presented an abnormal course.

Epidemic Typhus on Island.—Aldershoff describes a small epidemic of typhus on the island of Urk for which no source of infection could be discovered except that a similar epidemic had occurred on the island thirty years before, with occasional cases since. He remarks that pediculosis is universal among the 3,000 inhabitants of the island, and the small spread of the epidemic suggests immunization from previous attacks. He was impressed by the large proportion of mild ambulatory cases, but a few very severe cases testified that the virulence of the germ was not always attenuated, as in Brill's disease. Another peculiar feature of the epidemic was that the agglutination with the Weil-Felix proteus bacillus strain was constant and pronounced, but it was almost paralleled by the agglutination of an old strain of what was supposed to be paratyphoid A.

Familial Mongoloid Idiocy.—Van der Scheer has been able to find on record only eleven families in which more than one of the children presented mongoloid idiocy. But the Holland town of Lisse has two families in which there are two or three mongoloid idiots. In one of the families two idiot girls were born and then three normal sons. The parents were young and healthy, but the woman had been severely frightened by a dog at the third month of her first pregnancy, and another fright was experienced at the sixth month of her second pregnancy. In the other family, two boys and one girl are mongoloid idiots while two other boys are normal, one the first born and the other the last born in the family. The mother's father had been a habitual drunkard and her grandmother and an uncle had been mentally deranged. No instances of multiple occurrence of idiocy are known in the families of eight idiots in the Netherlands State Institution for the feebleminded. The article is illustrated, and Van der Scheer urges examination with special care of the stillborn children and miscarriages in families with a mongoloid idiot; also research on the influence of emotional stress on the course of a pregnancy.

Mededeelingen v. d. Burg. Geneesk. Dienst, Batavia

1919, No. 1

*Hygienic Conditions in United States, Panama and Cuba. C. W. F. Winckel.—p. 1.

Hygiene in Panama, Cuba and the United States.—Winckel is a health officer in the Netherlands East Indies, and the Netherlands minister for colonial affairs sent him to this country to study conditions here. His illustrated official report deals mainly with measures for prophylaxis of malaria, plague, hookworm and typhoid fever, besides the eradication of yellow fever in Cuba and Panama, and the general hygiene of the Canal Zone. The trip was made in the first half of 1917 on a year's leave of absence. The daily papers in this country mentioned at the time his presence at different points, conferring with the public health authorities and investigating their methods. His report fills eighty-four pages, written in parallel columns of Dutch and English. He remarks of the public health service in Cuba that possibly it owes its model efficiency to the fact that the chief of the service is a member of the cabinet, and hence a person of authority, entirely free from municipal and communal jurisdiction. Panama and Colon are likwise managed from the central administration office of the Canal Zone.

Kitasato Archives of Experimental Medicine, Tokyo

December, 1918, **2**, No. 3

*Japanese River Fever. T. Kitashima and M. Miyajima.—p. 237. In German. Conc'n.
Bacteriology of Influenza. I. Okawara, T. Tanaka, Y. Watanabe, R. Koyama and T. Sato.—p. 335. In English.

Tsutsugamushi Fever.—This concluding instalment of this monograph by Kitashima and Miyajima is accompanied by eight plates, most of them colored, showing the acaris responsible for Japanese river fever, its habitat, etc. The extensive research on the therapeutic aspect gave constantly negative results. Hence attention must be centered on individual prophylaxis to protect against the bites of the mite. They expatiate on the resemblance between exanthematous typhus, Rocky Mountain spotted fever and this tsutsugamushi disease: The type of the fever is similar, keeping on a high level when the maximum of 40 or 41 C. is reached; the eruption; the character of the virus which has little resisting power against physical and chemical actions, and cannot be filtered through porcelain; also in the nature of the causal agent, which is found in abundance in the blood, on the blood cells, especially the leukocytes; also in the mode of infection, the virus being inoculated by the bite of an insect or mite which must be regarded as the intermediate host. On the other hand, monkeys that have had tsutsugamushi disease contract typical typhus when inoculated, and vice versa. They add that although the virus cannot be filtered through porcelain yet it evidently belongs in the same group with the filtrate virus of yellow fever, dengue, etc. They cite seventy-three articles that have been published in Japan on the subject, and others published elsewhere on this group of diseases in reference to the etiology—a total of 165 articles. They have been studying the problem of the germ of this disease for fourteen years. The field mouse seems to be the natural host of the mite in question, but the spirochetes cultivated from the field mice do not seem to be pathogenic for other mice or for guinea-pigs. They add that the ultramicroscopic causal agent is still as much of a mystery as ever, leaving a wide field open for experimental medicine.

Mitteilungen a. d. med. Fakultät. d. k. Univ. Tokyo

Nov. 26, 1917, **18**, No. 3, German Edition

*Lipoid Cleavage Products in Spinal Cord. F. Shionoya.—p. 285.
*The Donath-Landsteiner Reaction. Y. Nakamura and S. Yabe.—p. 302.
*Japanese Drugs. W. Sakai.—p. 317.
*Acromegaly without Pituitary Tumor. S. Yamada.—p. 411.

This issue of the *Mitteilungen* was not received until March 7, 1919. A number of fine plates accompany Yamada's article and one Shionoya's.

Lipoid Cleavage Products in Spinal Cord.—Shionoya refers to the lipoid cleavage products in the secondary degeneration of fibers in the human spinal cord, giving a colored plate of the findings in one of eleven cases described. The patient in this case was a man of 32 with amyotrophic lateral sclerosis.

The Donath-Landsteiner Reaction.—Nakamura and Yabe report the findings with this reaction in relapsing fever, malaria, paroxysmal hemoglobinuria and syphilitic affections. The "cold hemolysis" was found in tabes, in relapsing fever and in progressive paralysis, so it is not peculiar to paroxysmal hemoglobinuria as hitherto accepted, and it may occur without the latter.

Japanese and Chinese Drugs.—Sakai relates the outcome of pharmacologic and experimental tests of four drugs that have been in use in Japan and China for centuries, ginseng, cnidium, ligusticum acutilobum and the root of the angelica anomala L.

Acromegaly Without Pituitary Tumor.—Yamada's patient was a young merchant, robust until at 17 he noticed that hands and feet were growing larger. On several occasions he presented edema, hypoesthesia of the calves and finally lassitude and fatigue, with death at 21 from acute beriberi. The pituitary was found apparently normal. Probably the entire polyglandular system was involved in the production of the acromegaly.

Norsk Magazin for Lægevidenskaben, Christiania

January, 1919, **80**, No. 1

*Influenza in Norway. Y. Ustvedt.—p. 1.
*Necropsy Findings in Epidemic Influenza. E. H. Hansteen.—p. 21.
*Streptococci in Influenza. T. Schønfelder.—p. 29.
*Rare Complications with Pseudo-Influenza. G. W. Keyser.—p. 35.
The War and Psychiatry. W. H. R. Rivers.—p. 47.
*Hypersusceptibility to Certain Drugs. C. Schiøtz.—p. 51.
*Drugs to Aid in Delivery. G. Benestad. Supplement, pp. 1 to 171.

Influenza.—Ustvedt relates his experiences at the Ullevaal Hospital up to September, 1918. There were 197 cases of influenza pneumonia, with 32.5 per cent. mortality. He reviews further the previous epidemics of influenza, beginning with the first in 1173. Since 1890 there have been cases reported every year from the 10,461 cases in Christiania in 1890 and 5,278 in 1901 to the lowest figure, 138 in 1906. The cases listed as influenza in the last few years may have been merely a catarrhal fever. This is the more probable as the cases were restricted to the winter months while influenza usually occurs at other seasons. The elderly in his district seemed to escape the disease in 1918.

Necropsy Findings in Influenza.—Hansteen relates from the same hospital that Pfeiffer's bacillus was very rarely encountered but a streptococcus was found very common, in some cases in pure culture in the lungs, in others in the heart or spleen. In many cases it was found in the lungs associated with staphylococci, pneumococci or other bacteria. Suppurative meningitis was found in some of the cadavers, hemorrhagic encephalitis in one, and acute verrucous endocarditis in four.

Streptococci in Influenza.—Schønfelder describes the streptococcus found in many of the cases at the Ullevaal Hospital. It was found often nearly in pure culture in the influenza lung, in the spinal fluid with influenza meningitis, in the blood, and in the pleural effusions. It was only slightly pathogenic for animals, which was also the case with Pfeiffer's bacillus.

Complications of Pseudo-Influenza.—Keyser has had 308 cases since last June of what he calls false influenza. He says that it resembles true influenza except for the bacteriologic findings. Among the complications encountered were pneumonia in two cases, conjunctivitis in fifteen; tuberculous epididymitis, herpes zoster and acute meningitis in one case each. One previously healthy man complained of trigeminal neuralgia and tenderness and swelling of large numbers of glands at different points.

Hypersusceptibility to Certain Drugs.—Schiøtz gives an illustrated description of a case of lymphosarcoma in a young woman in which, the day after beginning to take potassium iodid, a severe pemphigus developed on hands and face, the vesicles suppurating. He theorizes to explain such an idiosyncrasy as an explosive catalytic process induced by the action of normal chemical organ products on the nervous system, the process started by the presence of some exogenous catalyzer, in this case potassium iodid. Waetzold has demonstrated that epinephrin and faradization have a much stronger effect after iodin than otherwise. Schiøtz recalls that the symptoms with such an idiosyncrasy differ entirely from those with an intoxication. Notwithstanding the variety of the symptoms induced by hypersusceptibility to a drug or food, they all fit into the frame of disturbances resulting from an upset in the balance of the vegetative nervous system, as he explains in detail. Either the sympathetic or the autonomous system becomes impaired under the influence of the drug or food in question, and then the other system gets the upper hand and the symptoms follow. Persons with an unstable nervous system are peculiarly liable to develop these idiosyncrasies. Research in hospitals, etc., might reveal that women were more inclined to them than men. He has noticed further that there may be periods in which the vegetative nervous system is more unstable than at other times. A drug may be taken over a long period without intolerance, and then suddenly, if its administration coincides with some transient period of extra instability, the idiosyncrasy may become manifest. Menstruation eruptions and menstruation idiosyncrasies have been recorded. Anaphylaxis is an acquired specific hypersusceptibility, and the symptoms with an idiosyncrasy resemble in many points the clinical picture of anaphylaxis, and suggest that the same measures might prove effectual in each. Atropin has proved effectual in the heart and respiratory disturbances from morphin poisoning, and atropin has also been found to cure urticaria in some cases. Lewin asserted long ago that belladonna may enable persons to take potassium iodid who under other conditions are unable to tolerate it, but his statement was not confirmed by others. Nägeli has recently reported a case in which injection of an arsphenamin preparation was always followed by an eruption, but a preliminary injection of epinephrin warded this off. The analogy with anaphylaxis here is most striking, Schiøtz remarks. He discusses further the differential diagnosis of hysteria from idiosyncrasy, declaring that the latter is only one link in a long chain which includes asthma, serum sickness, acute circumscribed edema, certain forms of purpura, hay-fever and periodical vomiting with acetonemia. There is a wide field for research here. Cases should be studied by analysis of the urine (acetone), the blood should be examined for eosinophilia, leukopenia; noting the sex and the age as predisposing factors.

Drugs to Aid Delivery.—Benestad discusses quinin and pituitary extracts, with ten pages of bibliography, giving the details of 111 cases in which one or more of these drugs were applied. The maximal dose of pituitary extract, he reiterates, must never be higher than twice the ordinary therapeutic dose. As a rule, one injection during the dilating phase and one during the phase of expulsion are all that should be used. The therapeutic dose of pituitary extract should correspond to not more than 0.10 gm. of the gland substance. In 71 per cent. of his cases delivery proceeded spontaneously after a single injection of the pituitary extract. The failures were due to causes which the drug could not influence, extra large size of the fetus, rigid parts, etc. He advises operative delivery if the birth does not progress during the hour following the injection in the second stage of labor when the labor contractions are growing weaker. The effect seemed the same in primiparas and multiparas.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1918, **44**, No. 4

*Deafmutism in Sweden. E. Bergh.—p. 507.

Deafmutism in Sweden.—Bergh's extensive investigation of deafmutism in the Malmöhus district revealed 383 deaf mutes, that is, about 8.4 per ten thousand inhabitants of that region. The proportion was 10.9 in the towns and only 6.8 in the rural districts. Only 28.2 per cent. of all were known to be congenitally deaf. Six pages of literature are appended and all this material is discussed from the economic, national, etiologic and social standpoints, as well as prophylaxis and treatment, the whole filling nearly 200 pages. In the district investigated, direct transmission of congenital deafmutism to the offspring does not seem to be much of a factor in deafmutism. On the other hand, deafmute marriages result in few offspring. Prohibition of consanguineous marriages would not accomplish much as the parties could get married in other countries or cohabit without marriage. The most important factor in deafmutism is seen by these researches to be infectious diseases, and it is against these that prophylactic measures should be directed.

Ugeskrift for Læger, Copenhagen

Jan. 16, 1919, **81**, No. 3

*Habitual Constipation. VIII, T. E. H. Thaysen.—p. 91. Conc'n.

Habitual Constipation.—Thaysen calls his method of treating habitual constipation the alaxative method. It is based to a certain extent on Dubois' principle but he does not accept Dubois' assumption that the constipation is the result of psychic inhibiting processes. The principle of treatment is absolute abstention from laxatives and training the bowels to move at a certain hour every day. Dubois advises suppressing the desire for defecation at any other time than the appointed hour, but Thaysen advocates heeding it and yielding to it whenever it may occur, but always going to stool regularly, at the appointed time every day, regardless of whether there is a desire or not. The idea that it is impossible for one to have a normal passage certainly aids in maintaining the constipation, and emotional stress might check bowel functioning for a brief time, but otherwise he does not believe in a psychic etiology for habitual constipation. Some even regard the matter from the opposite point of view, maintaining that habitual constipation is the cause of psychic disturbance, neurasthenia, etc. His distinction between what he calls habitual constipation and ordinary constipation was outlined in the summary in The Journal, March 15, 1919, page 838, of an earlier instalment of his article. He emphasizes that the danger from going a long time without defecation is not so great as generally supposed. He never witnessed any signs of inflammation even when a patient went up to fourteen days without stool.

He gives the patient a card with printed directions to rise, for instance, at 8; at 8:15 drink a glass of tepid boiled water; at 8:30 a light breakfast; at 9 go to the W. C. and strive to have a passage, devoting fifteen minutes to it if necessary. At 9 p. m. eat some stewed fruit; retire at 10. Of course these hours can be altered to suit the patient's habits, but always having the meals regular and ensuring plenty of sleep. If there is a desire for defecation during the day it is to be yielded to. This aids in recalling to life the torpid defecation impulse. If the main defecation impulse is found to come at some other hour than in the morning, this hour can be appointed for the regular time and everything done to make this the center of the training of the bowel. With this alaxative treatment, natural movements usually begin by the third or fourth day. If the feces are very hard at first, a small oil enema or cocobutter suppository will remedy this.

When dyspepsia accompanies habitual constipation it generally develops several years after the onset of the latter; the pain at the cardia comes on soon after or during the meal, and the position, secretion and motor functioning of the stomach seem to be normal, or there is some slight secretory anomaly (mainly in men), or motor disturbance (mainly in women). The constipation further is of the habitual type, that is, it became a settled habit before the age of 26 in women and of 31 in men. The dyspepsia depresses the vitality and this sets up a vicious circle. Anorexia in these cases is usually of psychic origin, and the patient must have his interest in food aroused. Psychotherapy here may prove more successful than the most skilful dietetics. If the alaxative treatment fails completely, the next best treatment is with rectal injection of warm oil, 250 c.c. to be retained over night. The introduction of this method has wrought a revolution in the treatment of constipation, he adds, but it has the disadvantage of being more symptomatic than causal.

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NONSPECIFIC PROTEIN THERAPY IN INFLUENZAL PNEUMONIA

A CONSIDERATION OF THE ACTION OF TYPHOID PROTEIN *

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Because of our experience with the treatment of arthritis and other infections by the intravenous injection of typhoid protein,[1] our attention was drawn to the possible value of this method of treatment in influenzal pneumonia, particularly from the point of view of stimulating polymorphonuclear leukocyte production. We had not, however, had any experience with superimposing an increased temperature on an already febrile condition. For this reason and because of our lack of definite knowledge of what was to us a new pneumonia, we hesitated to try so drastic a measure in the early part of the epidemic. The present report records the treatment of nine cases; a small number, but sufficient to afford some trustworthy knowledge.

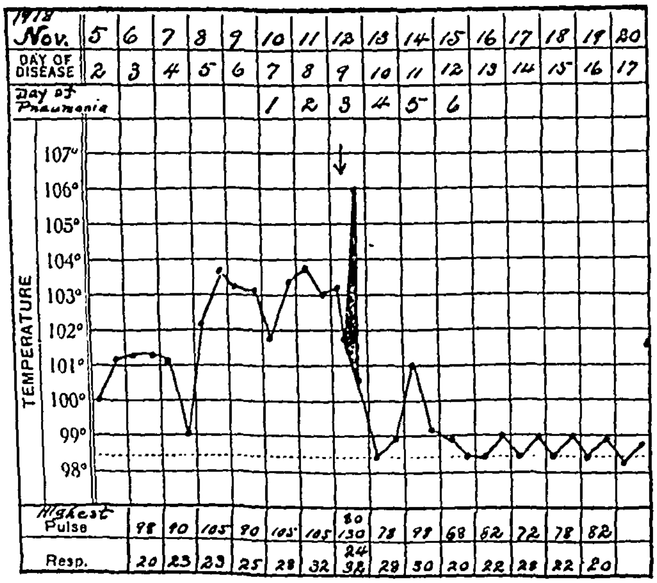

Chart 1.—Temperature, pulse and respiration in Case 1.

REPORT OF CASES

Case 1 (4385).—Dr. H. entered the contagious hospital, Nov. 5, 1918, with influenza, the second day of the disease. He developed pneumonia on the seventh day of the disease. Five hundred million dead typhoid bacilli were given intravenously, November 12, the third day of the pneumonia. The reaction is shown in Chart 1. In forty-five minutes the patient reacted with a severe chill. The temperature reached 106 F. Previous to the injection the temperature was 101.8. The following morning the temperature was 98.6, and remained normal except for one day, when it reached 101, promptly returning to normal. The signs in the chest gradually cleared up, but the spoken voice was still exaggerated over the right base on discharge.

This patient had a frank pneumonia of the lower right base. The urine showed albumin and casts. The leukocytes were as indicated in Table 1.

Case 2 (4388).—Harold F. entered the contagious hospital with influenza, Nov. 7, 1918, on the fourth day of the disease. The first signs of pneumonia were discovered, November 11, the eighth day of the disease. Five hundred million dead typhoid bacilli (typhoid vaccine) were given intravenously at 10:30 a. m. A typical protein paroxysm followed. At the time of the injection, the temperature was 102.8. Half an hour later (11 a. m.), it was 100; at noon, 102; at 4 p. m., 98.8; at 6 p. m., 98.6—seven and a half hours after the injection. On the 13th at 8 a. m. the temperature had reached 103. A second intravenous injection of 500 million was given at 10:45 a. m., at which time the temperature had reached 99 F. A typical reaction followed, but the temperature did not go above 101.4. The chill began in thirty minutes and continued thirty minutes. Seven and a half hours after the injection, the temperature had reached 95.9, and it did not go above normal thereafter.

This patient had a well-marked double pneumonia, the right side being mostly involved. The urine never showed albumin or casts. The leukocyte counts are given in Table 2.

November 13, two days after the second intravenous injection, consolidation of the left base was the same as before the injection. There was now a slight patch on the right side below the angle of the scapula which we had not discovered before. November 25, physical signs were still present but were diminished. The patient was discharged. He was seen again two weeks later, and there was still evidence of the previous consolidation in the left base. He was feeling perfectly well and had been so since the second injection. It was difficult to keep this patient in bed after the second injection.

TABLE 1.—LEUKOCYTE COUNTS IN CASE 1

Nov. 12, 1918, first and only injection, 500 million dead typhoid bacilli:	Leukocytes	Polys. %	Total Lymph. %
Control 24 hours before injectiton	3,600	57	43
Control 12 hours before injection	3,300	55	45
Control 3 hours before injection	3,000	58	42
½ hour after injection	4,200	53	47
4 hours after injection	3,600	92	18
6 hours after injection	7,200	87	13
9 hours after injection	5,500	85	15
24 hours after injection	4,500	49	51
48 hours after injection	4,600	62	38

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* From the Department of Pediatrics and Contagious Diseases, University of Michigan.

[1] Cowie, D. M., and Calhoun, Henrietta: Nonspecific Therapy in Arthritis and Infections, Arch. Int. Med. 23: 69-131 (Jan.) 1919.

Case 3 (4443).—M. G., boy, aged 13, entered the contagious hospital, Dec. 13, 1918, with influenzal pneumonia in the left base, the fifth day of his illness. We have called this the first day of his pneumonia. The patient looked in fair condition. The process did not seem to be marked until the fourth day in the hospital, December 16, when distinct new areas were discovered in both bases. He still did not seem very ill. He was sleeping and eating well and did not spit blood. His lips were slightly cyanotic. The temperature was 104.8 in the morning. At 4:45 p. m. 1 billion dead typhoid bacilli were given intravenously. At this time his temperature was 105.6. Forty minutes later he had a severe chill lasting twenty-two minutes. The temperature did not increase, but an hour and fifteen minutes later it was the same, axillary. The following morning at 8, the temperature was 97. The patient was definitely better subjectively and objectively. The temperature remained down all of this day.

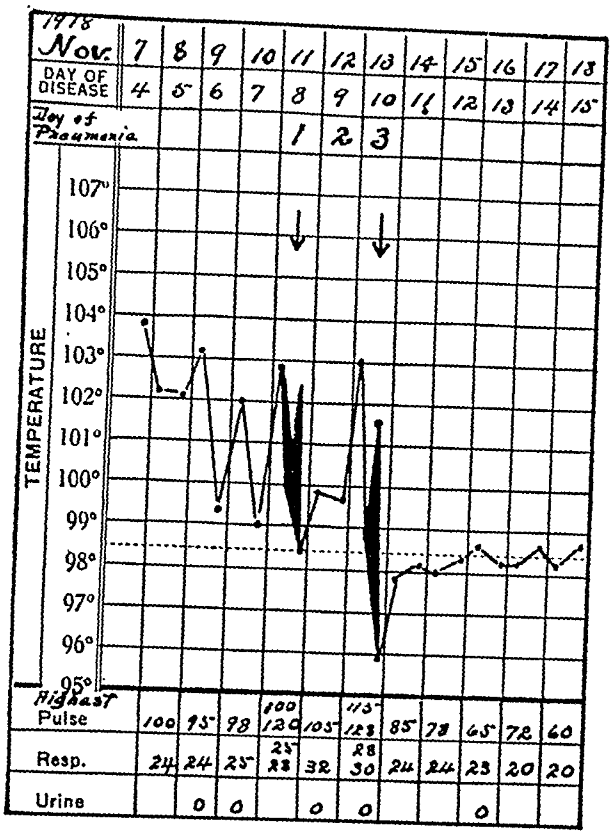

Chart 2.—Temperature, pulse and respiration in Case 2.

TABLE 2.—LEUKOCYTE COUNTS IN CASE 2

	Leukocytes
Nov. 11, 1918, first injection, 500 million typhoid bacilli:	
Control ½ hour before injection	7,500
½ hour after injection	
1 hour after injection	3,000
4 hours after injection	12,000
6 hours after injection	10,000
8 hours after injection	9,000
24 hours after injection	7,800
Oct. 13, 1918, second injection, 500 million typhoid vaccine:	
Control ½ hour before injection	6,000
½ hour after injection	4,500
2 hours after injection	11,000
8 hours after injection	10,500

The following morning at 6 the temperature had again risen to 104.8, and the patient was definitely worse; in fact, he was very ill. At 9 a. m. a half billion dead typhoid bacilli were given intravenously. He reacted just as severely as with the first injection. The temperature reached 106.8 axillary. There was a characteristic fall in the temperature which soon returned to its former height. He grew progressively worse, and died on the second day after the last injection.

The effect of the protein on the pulse and respiration was quite marked, as will be seen from Chart 3.

Urine showed albumin and casts; these did not appear until after the injection. The leukocyte counts are given in Table 3.

Case 4. (4441).—P. K., man, aged 39, entered the contagious hospital, Dec. 16, 1918, with double influenzal pneumonia. He said that he had been ill five days, but we subsequently learned from a friend that he had been ill for two weeks previous to his entrance to the hospital. He was irrational. There was general cyanosis, particularly noticeable on extremities. One billion dead typhoid bacilli were given intravenously the day of entrance at 5 p. m. He reacted typically; the chill began in thirty minutes after the injection and lasted fifty minutes. The temperature before the injection was 103 and reached 105. The following morning the temperature was down to 100. The patient, however, showed no signs of improvement. He became more delirious, more cyanotic, and died at 3:45 a. m., December 18. The urine showed albumin and casts. The leukocytes before the injection were 4,400, one hour later 3,200, and the following morning at 11 a. m., 2,600.

TABLE 3.—LEUKOCYTE COUNTS IN CASE 3

	Leukocytes
12/16/18:	
4:00 p. m. control	8,300
4:45 p. m. 1 billion dead typhoid bacilli	
5:45 p. m.	7,400
6:45 p. m.	8,800
12/17/18:	
11:00 a. m.	15,800

The physical signs, if anything, were more marked after the intravenous injection.

Case 5 (4439).—E. S., woman, aged 20, entered the contagious hospital, Dec. 15, 1918, moribund, with double influenzal pneumonia, the eighth day of the disease and the third day of the pneumonia. There was general cyanosis. Five hundred million dead typhoid bacilli were given intravenously, December 16, at 10:45 a. m. A prompt reaction followed, the temperature reaching 106.8. Before the injection the temperature was 104. The chill began forty-five minutes after the injection and lasted ten minutes. The patient was worse after the reaction. The temperature went down to 100 twelve hours after injection. The cyanosis, however, was progressive from the time the patient entered the hospital. She died the tenth day of her illness. The urine gave a marked reaction for albumin, and there were numerous casts. The leukocytic changes are given in Table 4.

Case 6 (4459).—F. R., man, aged 21, entered the contagious hospital, Dec. 29, 1919, with influenza, the fifth day of the disease. No lung signs could be made out, but other signs pointed to a beginning pneumonia. The following day, December 30, the patient was given 400 million dead typhoid bacilli intravenously at 1 p. m. At this time the temperature was 103.6. There was no reaction for three hours, at which time the patient had a slight chill and the temperature rose to 105 (6 p. m.), after which it gradually declined, as shown in Chart 6. It will be observed that a high temperature was maintained for two days following the injection, but not as high as previous to the injection. This patient was very ill; he became delirious and developed a marked psychosis, for which he is still detained in the psychopathic hospital, one month after the temperature reached normal. We were never able to get any marked

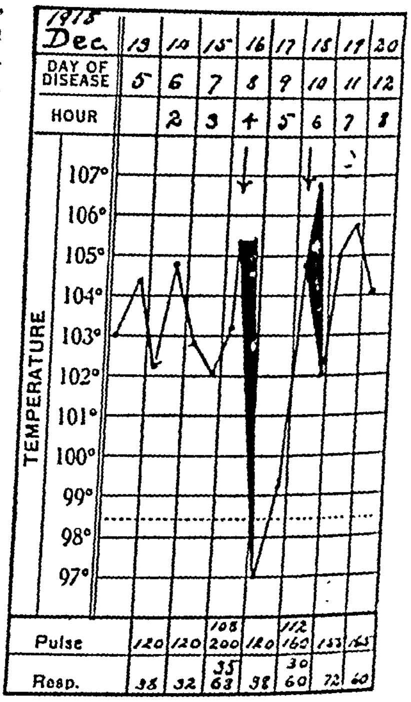

Chart 3.—Temperature, pulse and respiration in Case 3.

physical signs from this patient, for it was almost impossible to examine him. The marked cough, bloody sputum, high fever and other characteristic symptoms led us to regard the case as one of pneumonia.

The urine was negative at all times. The leukocytes were as given in Table 5.

CASE 7 (4460).—Miss N., aged 25, entered the contagious hospital, Dec. 29, 1918, with uncomplicated influenza, the second day of her illness. Pneumonia was detected in the right lower lobe the fifth day in hospital. The chest had been carefully examined each day. Inside of the first twenty-four hours, on the second day, she was given one-half billion dead typhoid bacilli intravenously at 6 p. m. At this time the temperature was 104. She reacted with a chill in forty-five minutes. The chill lasted ten minutes. In two hours the patient's temperature reached its acme, 105.2. The lowest temperature, 102.2, was recorded at midnight and at 6 the following morning. It returned to 104 at 10 a. m., and then dropped by quick lysis to normal, where it remained. The patient made a rapid and good recovery.

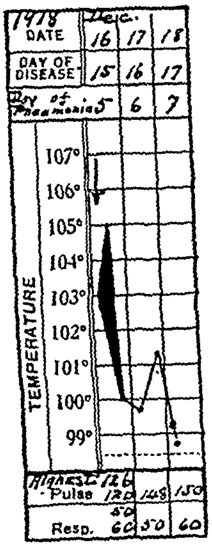

Chart 4.—Temperature, pulse and respiration in Case 4.

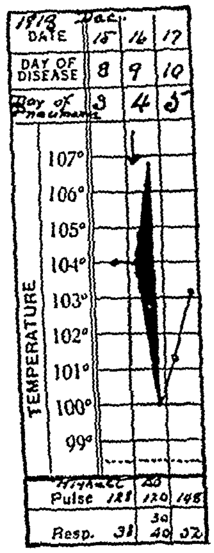

Chart 5.—Temperature, pulse and respiration in Case 5.

TABLE 4.—LEUKOCYTE COUNTS IN CASE 4

	Leukocytes	Polys. %	S. L. %	L. L. %	Trans. %	Eosin. %
12/16/18:						
10:30 a. m. control	5,600	75	18	5	2	
11:00 a. m. 500 million dead typhoid bacilli						
11:30 a. m.	5,400					
12:00 a. m.	4,200					
12:30 a. m.	7,700					
1:00 p. m.	8,200	78	17	4	0	1
2:00 p. m.	5,700					
3:00 p. m.	5,400					
4:00 p. m.	5,600					
6:00 p. m.	9,400					
8:00 p. m	12,600					
12/17/18:						
11:00 a. m.	19,800					

Albumin and casts were not found in the urine. The leukocytes are recorded in Table 6.

Before the intravenous injection, the process seemed to be confined to the right lower lobe. The day following the injection, a process was detected in the right middle lobe. We considered the patient's condition very serious, but on January 5, the third day after the injection, she began to show definite signs of improvement. The new process in the right middle lobe seemed to be more distinct.

She was discharged, January 15. At this time there was dulness and increased whispered voice over the lower right base. A roentgenogram taken the following day showed the lungs clear, but there was no question of the forgoing signs on the day of discharge.

CASE 8 (4470).—Mr. M. I. entered the contagious hospital, Jan. 6, 1919, with influenzal pneumonia in the left base, the fourth day of the disease and the first day of the pneumonia. Five hundred million dead typhoid bacilli were given intravenously, January 8, at 12 noon. At 12:47 he reacted with a severe chill, which lasted seventeen minutes when the temperature reached 105.6. Before the injection the temperature was 104.2. The following day the patient felt much better, but the night of January 9 he had severe pain in the left chest anteriorly. The respiration became more rapid; a friction rub was heard in the axilla. These signs of pleurisy continued until January 27. No effusion could be demonstrated at any time. The urine was negative at all times. The leukocytes on entrance were 9,200.

TABLE 5.—LEUKOCYTE COUNTS IN CASE 6

	Leukocytes
12/30/18 control	5,600
12/31/18 (1 p. m.) control	4,600
1 p. m. 400 million dead typhoid bacilli	
1:10 p. m.	2,100
3:00 p. m.	5,500
6:00 p. m.	5,800
8:00 a. m.	4,400

TABLE 6.—LEUKOCYTE COUNTS IN CASE 7

	Leukocytes	Polys. %	Total Lymph. %
Control before injection	3,200	51	49
½ hour after injection	2,500	34	66
1 hour after injection	3,200	30	44
1½ hours after injection	4,000	48	47

Nineteen days after the intravenous injection, roentgenoscopy revealed rather extensive signs of bronchopneumonia. The physical signs—dulness and increased whispered voice—continued over these areas. The patient seemed perfectly well. He was discharged from the hospital, February 1.

CASE 9 (4472).—A. R., man, aged 42, entered the contagious hospital, Jan. 7, 1919, with double influenzal pneumonia, the tenth day of his illness, and evidently so far as we could determine, the seventh day of the pneumonia. He came 9 miles in an ambulance and looked moribund when he entered. He raised considerable bloody sputum. His temperature on entrance was 99.6; at 10 a. m. the temperature had reached 103. At 2:30 p. m. he was given a half billion dead typhoid bacilli intravenously. He reacted forty minutes later with a marked chill, which lasted twenty minutes. The temperature reached 105.4 at this time. At 8 p. m. the temperature was 97.3 six and a half hours after the injection. The patient continued to get worse. The temperature never rose above 100 F. axillary. The patient died at 5:50 p. m., January 8, the second day in the hospital. The urine on entrance was negative. The leukocytes were 1,400; no further counts were made.[2]

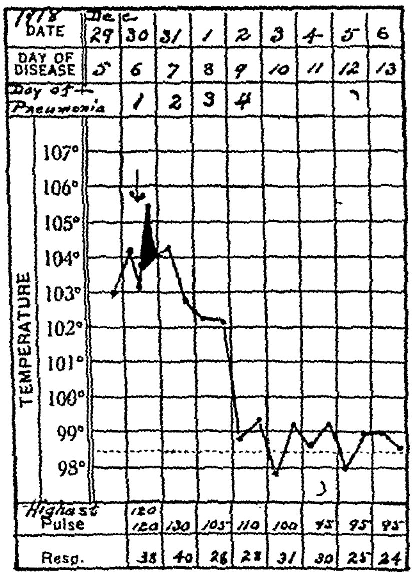

Chart 6.—Temperature, pulse and respiration in Case 6.

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[2] Since this article was written, we have treated another case of severe influenzal pneumonia by this method, a boy, aged 11, the fifth day of the disease, the second day of the pneumonia, with cyanosis and delirium. Thirty-six hours after the injection, the temperature fell to normal by crisis. There was a pseudocrisis twelve hours after the injection during which the temperature fell from 102.8 to 95.2.

EFFECTS OF THE INJECTIONS

The Effect on the Temperature.—Following the first injection of typhoid protein, there was an abrupt rise of temperature in seven of the nine cases. The rise varied from 1.2 to 4.2 degrees F. The height of the temperature was reached in from half an hour to five hours after the injection. In the two cases that did not react with a rise of temperature (Cases 2 and 3) there was an increase in temperature, however, following the second injection given from forty to forty-eight hours after the first injection. The rise was 2.8 and 3 degrees, respectively.

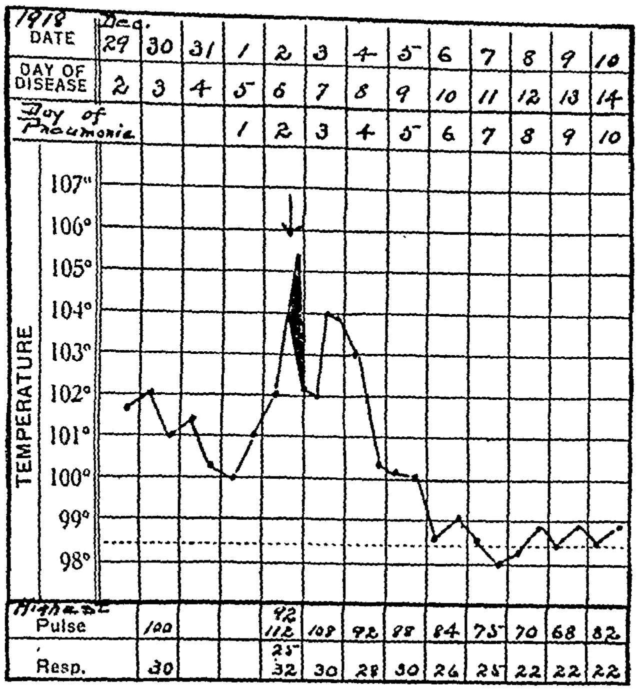

Chart 7.—Temperature, pulse and respiration in Case 7.

The temperature was reduced below the height reached just previous to the injection in eight cases. This reduction occurred from five hours to sixteen hours after the injection, usually within eight hours. The reduction varied from 0.4 to 8.6 degrees. The induced temperature fall was usually more than 3 degrees. In Case 6, in which Table 7 records no fall in temperature following the injection, there was a definite decrease, but this did not occur until the third day. We attribute this to a prolonged protein reaction, such as was observed by Cowie and Calhoun[1] in Case 8 of their series. As there might be a doubt concerning this, we have not included it in the graphic chart or in Table 7. From these observations we conclude that an intravenous injection of typhoid protein in influenzal pneumonia causes a typical clinical protein reaction, which is followed by a marked decrease in the temperature.

The Effect on the Pulse.—Following the injection of typhoid protein, in six of the nine cases there was a rise in the pulse rate. The rise varied from 8 to 50 beats a minute, excepting in Case 3, in which the increase for the first injection was 48, and for the second, 92. In three cases there was no effect on the pulse rate. In those cases in which an increase occurred, it usually amounted to 20 beats a minute. An interesting observation is that the highest pulse was not reached until an hour and sometimes two hours after the injection. A dangerous pulse rate was observed in only one case, referred to above, but even in this case there was no permanent effect on the pulse.

We concluded that an intravenous injection of typhoid protein causes an increase of about 20 beats a minute in the pulse rate in from one to two hours after the injection. This increase is not permanent. We were unable to demonstrate in any way that the myocardium had been injured by the injection.

The Effect on the Respiration.—Following the injection of typhoid protein, the respiration rate was increased in seven of the nine cases. The increase varied from 7 to 15 respirations in all but one case (Case 3). After the first injection of one billion dead typhoid bacilli in this case the increase in the respiratory rate was 33. After the second injection of one-half billion, given two days later, the increase was practically the same, 30. The effect on the respiration, as on the pulse, was not a permanent one.

The Effect on the Physical Signs.—Almost invariably the physical signs were more marked following the injection. This was just as true of those who lived as of those who died. In a large percentage of our influenzal pneumonias the physical signs persisted a long time after the patient was, apparently, well, and, as the same findings occurred in our pneumonia patients treated with typhoid protein, we feel justified in saying that the injection had no effect on the physical signs. We certainly could not demonstrate that the signs were in any way decreased.

The Effect on the Course of the Disease.—In the patients that lived, the symptoms of the disease were terminated by crises in four cases, two on the first day after the injection (Cases 1 and 2), one on the second day (Case 7), and one on the third day (Case 6). In Case 2 the crisis followed the second injection. In one case the symptoms terminated by lysis. In the patients that died, no effect was observed in two instances. There was a decrease of temperature in Case 8. In Case 3 in addition to the decreased temperature, definite signs of general improvement occurred for twenty-four hours following the first injection. In each one of these cases we felt that the course of the disease would have been terminated by death had not the foreign protein been given.

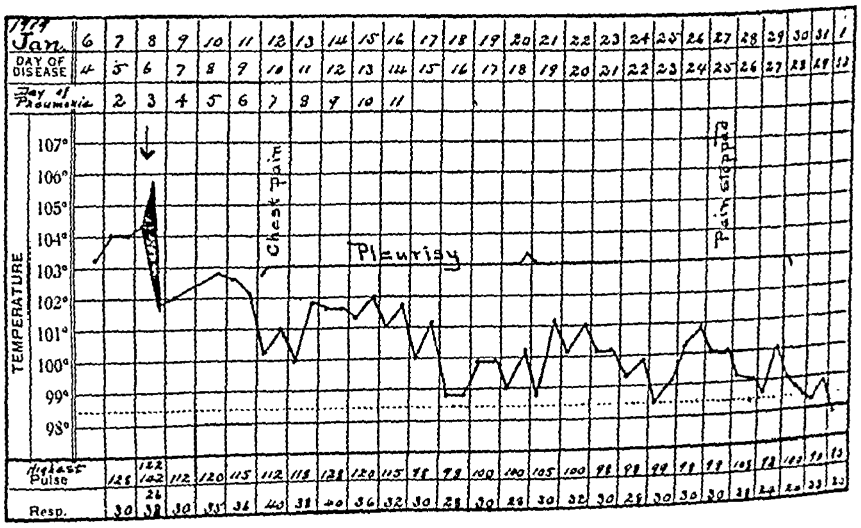

Chart 8.—Temperature, pulse and respiration in Case 8.

An analysis of our charts shows that no improvement was obtained in those patients who received injections after the third day of the pneumonia (Cases 3, 4, 5 and 9), while those who received the injection not later than the third day recovered.

The Effect on the Leukocytes.—It was not possible for us to carry on a systematic examination of the progressive leukocyte changes in the blood following the injection of the typhoid protein, as has been done by Cowie and Calhoun in other infections. We have enough data to conclude that a fairly typical leukocyte response was obtained in the majority of the cases. The response was usually only of moderate degree. In two patients, both of whom died, there was a marked increase in the leukocytes on the day following the injection, amounting to 8,000 in one case and 14,000 in the other. These may have been prolonged reactions, such as were observed by Cowie and Calhoun, in which a very high leukocytosis was maintained for thirty-six hours after the injection.

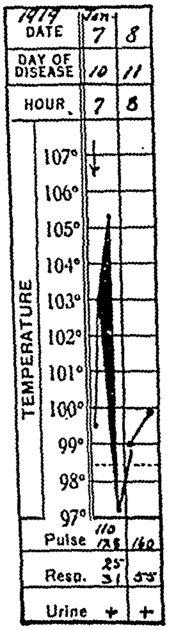

Chart 9.—Temperature, pulse and respiration in Case 9.

The typhoid protein, as a rule, induced no marked or permanent change in the number of the leukocytes.

The Effect on the Urine.—Urine examinations were done before and after the injections in all but one case (Case 9). In two of these, albumin and casts were found on the day following the injection when they had not been present before. One of these patients died. In a third case, albumin and casts appeared on the second day after the injection was given, the day on which the patient died. In the other cases there was no change in the urinary findings.

DOSAGE

The clinical reaction is more marked after a billion dose of dead typhoid bacilli, but no more beneficial effect was produced in the blood, subjective symptoms, or on the course of the disease than was noted with the half-billion dose. Our experience from observation of the reactions inclines us to recommend the half-billion dose. It may be a significant fact that in the two cases in which a billion dose was given, both patients died (Table 7).

Care should be taken that at least a day intervenes if more than one dose is given.

CONCLUSIONS

1. An intravenous injection of typhoid protein in influenzal pneumonia is a safe procedure within limitations.

2. Intravenous injection of typhoid protein is indicated only in the beginning stage of the pneumonia, so far as we are able to determine from our limited number of cases.

3. The use of this method of treatment is contraindicated (*a*) in cases of influenzal pneumonia advanced beyond the third day of the disease, or (*b*) when there is undoubted evidence of advanced myocardial insufficiency or acute endocarditis.

4. No more than 500 million dead typhoid bacilli should be given at one injection. For well known reasons, at least forty-eight hours should intervene before another injection is given.

5. The immediate effect of the foreign protein is the development of a typical protein paroxysm, which is followed by a marked decrease in the temperature and a definite improvement in the subjective symptoms, both of which are usually permanent.

6. Following the injection of the typhoid protein, there is a characteristic leukocytic movement. The leukocyte increase in the cases studied is only of moderate degree. There is no permanent improvement in the leukopenia or downward tendency of the leukocytes.

7. The effect on the pulse, respiration, physical signs and urine findings is practically negligible.

8. An intravenous injection of typhoid protein may bring about a termination of the acute symptoms of the disease in from one to three days.

TABLE 7.—RESULTS OF PROTEIN INJECTIONS

					Protein Reaction							
No.	Case	Injection No.	Size of Dose Billions	Temperature before Injection	Height of Temp. after Injection	Degrees of Temp. Induced by Injection	Time Period of Rise Hr.	Lowest Temp. Induced by Injection	Degrees of Temp. Reduction Induced by Injection	Time Period of Fall	Temperature Subsequent to Protein Reaction	Result
1	4385	1	½	101.8	106.0	4.2	¾	100.6	1.2	8	Remained normal	Recovered
2	4388	1	½	102.8	100.0	0.0	0	98.6	4.2	8½	Reduction lasted only 24 hours	Recovered
		2	½	99.0	101.4	2.4	1	95.9	3.1	7½	Remained normal	
3	4443	1	1	105.6	105.6	0.0	0	97.0	8.6	16	Reduction lasted only 24 hours	Died
		2	½	104.8	106.8	2.0	1	102.0	2.8	5	Remained down only 8 hours	
4	4441	1	1	103.0	105.2	2.0	1	100.0	3.0	4	Remained down permanently	Died
5	4439	1	½	104.0	106.8	2.8	1	100.0	4.0	12	Following day rose to 103.2	Died
6	4459	1	½	103.6	105.2	1.6	5	104.0	0.0	0	Remained above 102 for two days, then fell to normal by crisis	Recovered
7	4460	1	½	104.0	105.2	1.2	2	102.2	1.8	6	Remained above 102 two days, then fell by crisis..	Recovered
8	4470	1	½	104.2	105 6	1.4	1	101.8	2.4	8	Remained between 102 and 103 for three days, then below 102 to end of pleurisy	Recovered
9	4472	1	½	103.0	105.4	2.4	1	97.3	5.7	5	Remained down 12 hours; following night rose to 103	Died

Results from Children's Year Campaign.—The Children's Bureau in a bulletin just issued gives a preliminary accounting of the success of the Children's Year Campaign, begun April 6, 1918, to save 100,000 babies. The reports are not all in yet, but among the first activities was the weighing and measuring of the babies. Of 7,000,000 cards distributed, 1,619,283 have been returned to the bureau, where the information will be tabulated. Twenty-four states have employed new public health nurses, 137 having been employed in ten of the states. One hundred and thirty-four children's health centers were established during the year in fifteen states, with an uncertain number of centers established in nine other states. Forty-three states are conducting back to school and stay in school drives, and a number of communities have established scholarship funds to enable the children of needy parents to continue their education after they reach the legal working age. At least one scholar[illegible] for each of the 281,000 schools in [illegible] ry is the aim [illegible] bureau is planning a confer[illegible] foreign child w[illegible] experts.

A STUDY OF ACUTE MASTOIDITIS AT FORT RILEY, KANSAS

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Acute mastoiditis as a contributing cause to the ineffective list in army camps has assumed great importance. This is due to (1) the large number of cases; (2) the long convalescence (seven weeks is the average), and (3) the tendency toward imaginary if not real weakness of the individual for several weeks, or even months, following his return to duty. The mastoid wards in the departments of head surgery require more attention from the staff officers, nurses and corpsmen than all other wards. The seriousness of the disease in itself demands constant attention to the many details that are associated with a critical illness in the army. Only those who have been in the service can appreciate the importance of this statement.

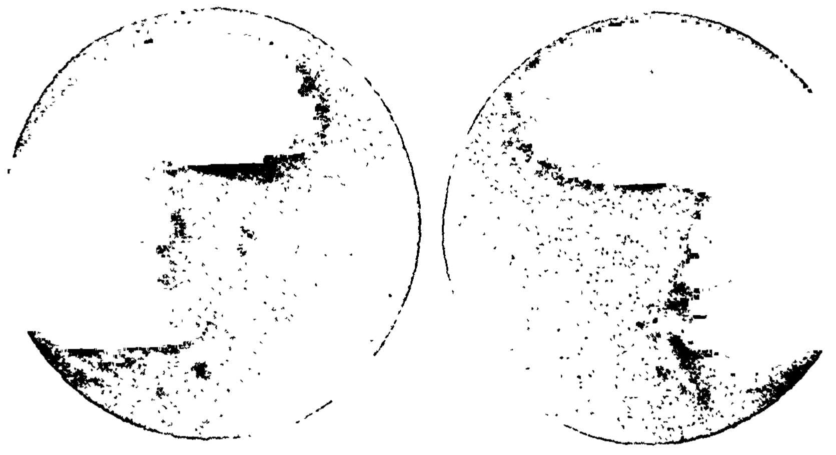

Fig. 1 (Type 1).—Absence of cells in mastoid; double otitis media with tenderness of mastoid area; no operation.

Since each base hospital connected with the various cantonments had mastoid cases in larger numbers than the civil hospitals, and the opportunity for the study of individual cases was favorable, a better knowledge of this disease was the natural result. The unlimited laboratory and roentgenographic facilities, the occurrence during epidemics of the exciting causes of mastoiditis, bringing many cases of a particular type under observation at one time, and finally the opportunity to operate when it was deemed necessary, afforded an unusual opportunity to study this disease.

The last has not been heard of the recent epidemic of influenzal pneumonia, and otitis media will be encountered for at least another year, owing to the hangover virus which took such a terrible toll. Elsewhere a report on the epidemic at Camp Funston has been reported.[1] In it can be found details of interest in connection with this article.

ETIOLOGY

The prevalence of mastoiditis in our army camps is not surprising when analyzed from the etiologic standpoint. In ordinary peace times, mastoiditis is rather infrequent. But our army was suddenly increased many times. Intensive training became the order of the day. Men were suddenly taken from all walks of life and were housed in barracks. Work could not stop because of changes in the weather. Slight indisposition of the individual soldier was not sufficient to permit a luxurious room and a rest from work for a day or a week. The men did not become hardened soldiers in a day. The camp conditions, while for the most part conducive to health and physical development, were for an occasional one here and there just the opposite. An epidemic of mumps and measles, isolated cases of scarlet fever, diphtheria, meningitis, and almost universal tonsillitis, all aided in the development of a rather peculiar condition which was responsible in the end for the increased incidence of two army diseases of importance, pneumonia and mastoiditis.

LOCALITY INFECTION

By the term "locality infection" is meant the occurrence in a locality or army post of a certain organism which is found to predominate either singly or combined, in infections occurring in that particular locality or army post. At one camp, for instance, the hemolytic streptococcus may be the organism found in the tonsil crypts, in pneumonia, in mastoiditis, or other diseases, while in another camp the pneumococcus or *Streptococcus viridans* may be the prevailing organism. Any one of these organisms may become virulent for a certain period and then apparently becomes of little consequence. However, when an epidemic of tonsillitis, measles, scarlet fever or influenza occurs, then the particular organism for a certain locality suddenly assumes the rôle of secondary invader and becomes the predominating factor in complications. That the temporary home for this "locality-infection" organism is in the tonsil crypt is undoubtedly true, though it is found at times in the accessory nasal sinuses.

The spasmodic appearance of a number of cases of acute mastoiditis is not surprising when one considers the foregoing factors as noted in cantonments. This is illustrated in Table 1. During January, February, March, April and May of 1918, the hemolytic streptococcus was the locality infection at Camp Funston. The number of pneumonias and mastoiditis cases (requiring mastoidectomies) as shown in Table 1 was so great that one could speak of it as an epidemic. The organism that predominated in both series of cases was the hemolytic streptococcus, which occurred in 28.2 per cent. of all pneumonias and in 76 per cent.

TABLE 1.—INCIDENCE OF PNEUMONIAS AND MASTOIDECTOMIES AT BASE HOSPITAL, FORT RILEY, IN EARLY MONTHS OF 1918

1918	No. of Pneumonias	No. of Mastoidectomies
January	77	16
February	63	23
March	118	29
April	165	23
May	115	17

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1. Stone, W. J., and Swift, G. W.: Influenza and Influenzal Pneumonia Epidemic at Fort Riley, Kansas, J. A. M. A. **72**: 487 (Feb. 15) 1919. Stone, W. J.; Phillips, B. G., and Bliss, W. P.: A Clinical Study of Pneumonia Based on Eight Hundred and Seventy-One Cases, Arch. Int. Med. **22**: 409 (Oct.) 1918.

of the mastoids (cultures from the mastoid cells at time of operation). The term "streptococcus epidemic," therefore, is a better term.

In the recent epidemic of influenza in the same hospital, tissue cultures at necropsy showed the predominating organism again to be the hemolytic streptococcus. It was present singly or combined in 41.1 per cent. of all tissue cultures including the lung, pleural fluid, heart-blood, spleen, nasal sinuses, mastoids and spinal fluid. Blood stream invasion occurred late in this series of cases.[1]

Following the epidemic of influenza, cases of measles began to appear in large numbers, and again pneumonias and mastoiditis. The primary diseases lowered the resistance of the patients, and blood stream invasion by the prevalent organism, the hemolytic streptococcus, again occurred with the resulting complications. In a series of fifty mastoiditis cases beginning in October, 1918, twenty-two cases were complications of measles. The hemolytic streptococcus was found in 46 per cent. of all cases, as shown in Table 2.

From the foregoing statements one must conclude that the occurrence of mastoiditis as seen in army cantonments depends on the surroundings of the individual and the presence of a virulent organism, such as the streptococcus or pneumococcus; further, that the invasion of the mastoid occurs directly from the nasopharynx or the blood stream.

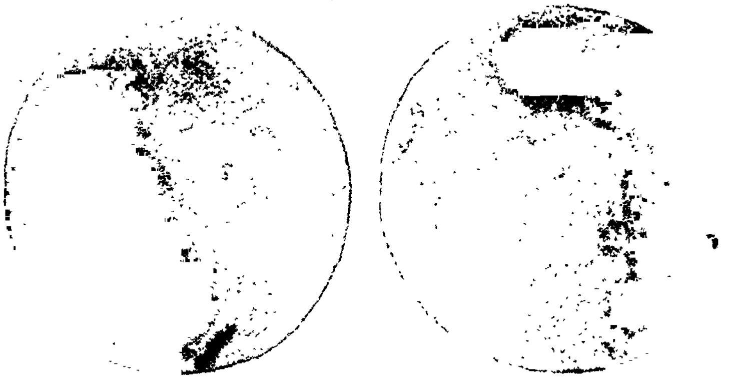
Fig. 2 (Type 1).—Presence of a few cells in posterior tip of right mastoid; double otitis media with tenderness of mastoid area.

PATHOLOGY

The importance of roentgenoscopy in the study of individual mastoid infections cannot be overestimated. The desultory taking of roentgenograms means absolutely nothing. The technic must be perfected with each machine and for each step in the production of a roentgenogram. The clinician must study the finished plate with the roentgenologist. One plate is not always sufficient. Both mastoids must be shown on one plate to afford means of comparison. When a new make of plates is used, the technic must be revised. One person should take all the exposures of a single mastoid case. If these rules are observed, the opening statement will prove true.

VARIATIONS

That all mastoids are similar is true, but a certain variation in the structure of the bone will be noticed after different roentgenograms have been studied. In general the cases fall into three types: (1) a rudimentary type, with a square or rectangular shape, having practically no mastoid cells; (2) a type presenting a more extensive area of large cells situated entirely behind and below the antrum, and (3) a type with a much larger area of many small cells extending into the zygoma, far back and down to the tip. Type 1 is never serious because there are no cells to become infected. The otitis media will eventually subside without operation. Types 2 and 3 must be carefully watched. In subacute cases the first roentgenogram may show a delicate haze over the entire region, the antrum being especially hazy, with areas here and there of denser opacity where the cell walls are thicker and the pus pocketed.

TABLE 2.—INCIDENCE OF ACCOMPANYING DISEASES AND BACTERIOLOGIC SHOWINGS IN FIFTY MASTOIDECTOMIES OPERATED ON BETWEEN OCT. 1 AND DEC. 31, 1918

THE PRECEDING DIAGNOSIS	No. of Cases	Per Cent.
Measles	22	44
Tonsillitis	19	38
Pneumonia	3	6
Influenza	6	12
Total	50	
BACTERIOLOGIC SHOWINGS IN CULTURES FROM MASTOID CELLS		
Streptcoccus hemolyticus	23	46
Staphylococcus	14	28
No culture	10	20
Miscellaneous	3	6
Total	50	

Bone necrosis will manifest itself by a confluence of the cellular spaces and a denser haziness in the region of the antrum and the tip. This can be detected only by comparison with the roentgenogram of the opposite or normal side. This comparison is of great advantage especially when the normal roentgenogram is on the same plate as the roentgenogram of the side affected. It is relatively true that the two mastoids correspond in size and structure in each individual case. Having the normal mastoid to use for comparison gives a clue to the size and shape of the mastoid, and to the degree of bone necrosis. A postoperative roentgenogram will frequently prove of value in cases that show a tendency toward sluggishness in healing.

Influenza cases develop frequent mastoid involvement without bone necrosis. On the other hand, measles-mastoiditis cases are very prone to develop bone necrosis of the fulminating type. The first necrosis occurs along the chain of cells leading from the antrum to the tip. These cells are deeply situated and have a dependent position as the patient rests in bed. The cell walls are delicate. The course of the sinus is changed at this place and causes an anatomic arrangement of these cells that is not conducive to easy drainage. Blocking at this point results in necrosis both in the tip and in this region. In the roentgenogram they are usually overshadowed by the overhanging posterior wall. When the angle is such as to reveal them they are seen between the dense wall surrounding the internal meatus and the white line just external to this which is the thickened inner table of the sinus as it courses downward to the bulb. When this line blends with the dense shadow of the wall of the meatus, one must study closely for necrosis in the tip cells. The technic, the classification of mastoids into types corresponding to the clinical types, the anatomic variations and the resulting shadow have been determined in an extensive study of this phase of the subject at the army hospital at Fort Riley with Captain Cummins and Lieutenant Kirklin of the roentgenologic department.

SYMPTOMATOLOGY

Under etiology, the subject of the onset of mastoiditis was discussed. This is of importance in further consideration of the symptomatology. Three distinct types or modes of onset are recognized:

1. Cases in which the otitis media symptoms predominate and the mastoid involvement is slight. The roentgenograms of Type 1 (Figs. 1 and 2) illustrate the anatomic features of this series of cases. The drum is bulging on inspection, and the discharge is profuse following rupture or paracentesis. These cases rupture spontaneously shortly after onset. The temperature is higher in this class than in any other. Eventually healing takes place, but not until numerous reopenings have been made in the drum.

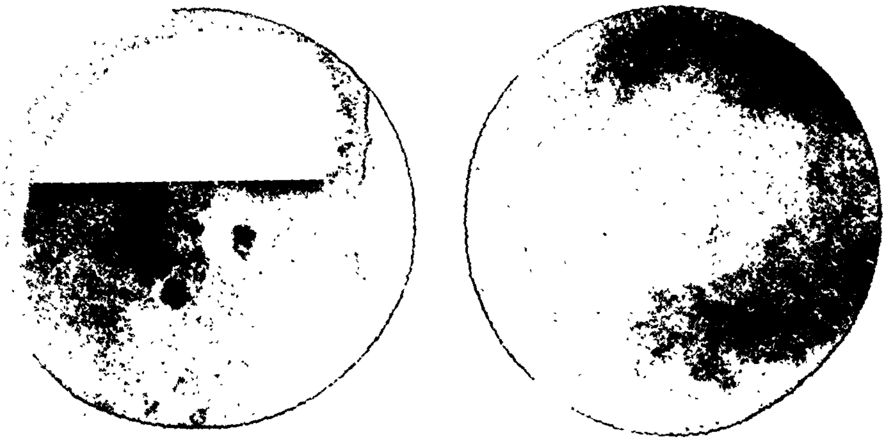

Fig. 3 (Type 2).—Acute mastoiditis (right); no necrosis of cells except between sinus and posterior wall, where a gutter leads from antrum to tip; verified at operation; case following measles; no culture.

2. Cases in which otitis media and mastoiditis appear to develop at one and the same time (Figs. 3 and 4). These cases are serious from the first. One must watch closely for necrosis. There may be no clinical symptoms other than a severe pain which is relieved on puncture of the drum. Suddenly the discharge stops and the case seems about to clear up, then an elevation of temperature is noticed — 99 F. in the afternoon, perhaps. From the beginning the roentgenograms show haziness and no tendency to clear. When operation is performed the entire cell structure is found to be necrotic. The absence of tenderness is due usually to the dense, hard, thick, outer table, but in some cases it may be elicited by deep pressure over the posterior aspect of the tip.

3. Cases occurring in systemic infections. The mastoid is invaded and becomes necrotic before any discomfort is noted by the patient. This seems to be a rash statement, yet operations have been performed in cases which presented this condition. The first symptom was a sudden, terrific headache. The drum appeared bulging but deep red. No pus escaped on puncture, and the opening closed rapidly. Roentgenograms in these cases showed extensive tip cell necrosis. On no basis other than blood stream invasion of the mastoid can this type of mastoiditis be explained.

BLOOD COUNTS AND CULTURES

The number of white cells in a series of fifty mastoid cases of all types averaged 13,300. That the white count depends on conditions other than the mastoiditis is evident. Too much emphasis cannot be placed on this test. Blood cultures are important when positive for the organism; therefore in cases of suspected system invasion, cultures should be obtained if possible.

HEADACHE

An important symptom is the headache occurring at any time during a mastoiditis. Headache suggests meningeal irritation. It is not always true that it points to so grave a complication, but whenever headache is constant one must consider the possibility at least of dural irritation. It is one of the first symptoms of meningitis. It is the one clinical symptom that, at no time during a mastoiditis, should ever be treated lightly.

MANAGEMENT OF INDIVIDUAL CASES

To class all mastoiditis cases in one group, and to operate only when the clinical symptoms are pronounced, is the tendency of most surgeons. The result of this procedure is uncertain. To advocate early operation in otitis media cases presenting mastoid tenderness is even less advisable. The ideal method would be to strike a happy medium — an impossible procedure. If one awaits the appearance of clinical symptoms of mastoiditis warranting operation, many cases will be so far advanced that destruction of bone, unsightly scars, and even death may result. If one operates too early, before bone necrosis occurs and resistance of the body to the infection is present, one submits the patient to unnecessary risk, the possibility of secondary operation because of bone infection and because of rapid absorption following operation.

There can be no set rule, for some cases require early and others late operation, depending on the circumstances connected with the individual case.

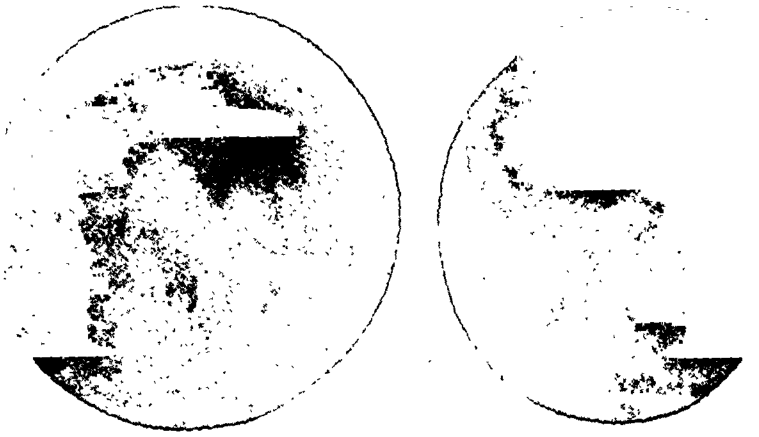

Fig. 4 (Type 2).—Necrosis of all posterior cells of right mastoid; outline of cells gone; verified at operation; hemolytic streptococcus.

The type of mastoiditis depends on two factors: (1) the anatomic arrangement of the mastoid cells, and (2) the character of the infection.

1. The first point was discussed under roentgenoscopy. Types 1, 2 and 3 are general types. Intermediate or overlapping cases are frequent, and so the types must be considered as relative rather than absolute—merely as a general rule for classification. An exception to this rule is found in those cases in which one side is normal, while the other side has a chronic otitis media resulting in sclerosis of the mastoid cells. These cases, however, are easily identified by taking a careful history.

2. The second point, the character of the infection, must be the determining factor in the majority of cases. But the factors to be considered are the condition of the patient, the organism present, and the degree of invasion. A patient who has had an acute infectious disease, such as measles or scarlet fever, or a prolonged illness, such as pneumonia, will develop suddenly bone necrosis. This constitutes the fulminating type of mastoiditis. Strong, robust individuals developing an otitis media following a cold or tonsillitis withstand a severe infection under ordinary circumstances. The streptococcus and the pneumonia groups are by far the most serious organisms to deal with. The degree of invasion depends on the presence or absence of bone necrosis, and is the most difficult of all the problems to solve.

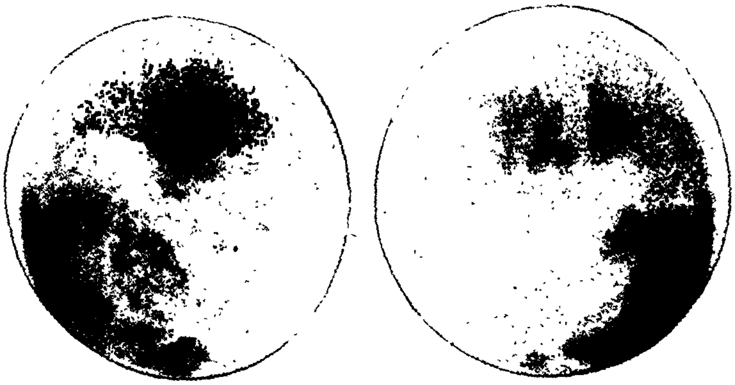

Fig. 5 (Type 3).—Influenzal mastoiditis; right mastoid shows delicate haze; no operation.

In a certain percentage of cases one may determine its presence by clinical symptoms—sudden appearance of the classical picture of mastoiditis. The problem is easily solved in these cases. But to wait for this classical picture is not always necessary, nor always safe. Many cases also will apparently subside and the patient will be discharged, only to have an irritable mastoid which will flare up on the first "bad cold." If sclerosis occurs, these patients later develop a chronic otitis media and become a nuisance both to themselves and to their associates.

An extensive study of many cases of acute mastoiditis has convinced us that the problem of bone necrosis can be solved by means of the roentgenogram, and when present, operative interference is imperative. The only exception to this rule is when blood stream invasion is known to have existed prior to the time of bone necrosis. In these cases one is justified in postponing the operation until the systemic infection subsides. This cannot always be done, and in such cases the prognosis is most grave.

THE OPERATION

Any operation that has for its subject the complete removal of the mastoid cells, drainage of the antrum, and the least possible trauma, is sufficient for the relief of mastoiditis. This means that sufficient bone must be removed to obtain access to all necrotic areas, even though it requires exposure of the sinus or dura.

AFTER-CARE

The quicker one obtains complete closure of the wound, the better for the patient. This does not mean permitting the cavity to fill with mushroom granulations. To obtain firm, clean granulations the use of chloramin-T paste is advised. General care of the patient should include rest, sufficient exercise, nourishing food, alkaline drinks, and repeated assurance that no ill effects will follow from the operation.

COMPLICATIONS

Two stages in the course of a mastoiditis case require one's attention, the diagnosis of bone necrosis and the diagnosis of complications. Many careful observers have spent hours in worry over whether to operate or to wait, only to have the case clear up or fulminate before decision has been reached. Who has not diagnosed a case as meningitis or sinus thrombosis only to find that a dose of calomel relieves all symptoms over night?

Facial Paralysis.—One does not have to worry over the diagnosis of a facial paralysis, and yet it is a great comfort to both the operator and the patient to state that it is only a paresis. One should never attempt to deceive oneself in regard to the cause of a facial accident. If the chisel slips, if the ridge is broken, if the curet is too sharp and cuts too deep and the face twitches in spasm, the result usually can be foretold and one need not hope just for a paresis. If, however, the staring eye, the smooth face, and the lifeless cheek appear on the second, third or fourth day, one may predict a paresis and assume a good prognosis. Massage, frequent dressings, and gradual exercise aid in recovery.

Sinus Thrombosis.—The classical symptoms of sinus thrombosis are too well known for much further discussion. In the absence of a fall in temperature or a sudden rise, the appearance of a swollen joint is not indicative of sinus trouble. Blood stream invasion by the organism may have preceded the onset of the mastoiditis and caused many so-called complications to mastoiditis, among them, arthritis.

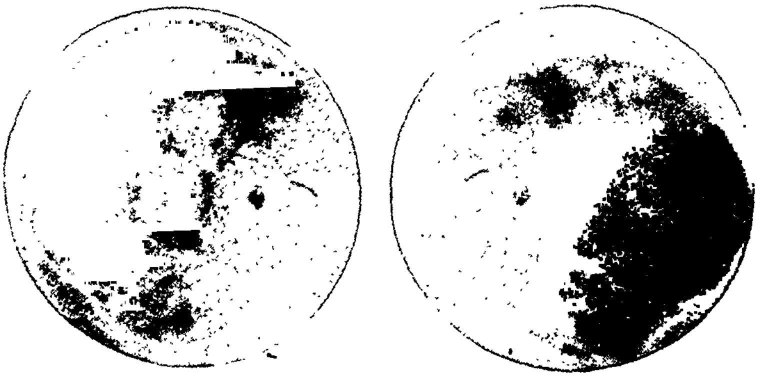

Fig. 6 (Type 3).—Influenza; right mastoid shows slight haze; no operation; white shadows external to bony canal show edge of lateral sinus.

Parotitis.—This is a complication in mastoiditis that occurs frequently. It is usually caused by too much or too forceful attention to the canal. The infective agent, usually *Streptococcus viridans,* gains access to the parotid region by way of the openings in the cartilaginous canal. Prompt incision with a Graefe knife at the point of entrance (seen in the canal) will relieve the condition. Facial paresis may develop from this complication.

Erysipelas.—This may develop especially following streptococcus infection. It is severe on the patient but never proves fatal. Treatment aids in relieving the suffering, but not in hastening the recovery.

MENINGITIS

The most serious and heart-breaking condition that may present itself is the headache, stiff neck, malaise, death from meningitis, the most dreaded of all complications and the least understood. In a series of necropsies in forty-one influenzal pneumonia cases, reported elsewhere, some interesting data were obtained. Later necropsies in three cases, diagnosed as meningitis occurring during mastoiditis convalescence, added to the knowledge obtained from the previous necropsies. From the forty-one necropsies it was found that meningitis was a frequent complication in pneumonia of the streptococcus and pneumococcus types; that in cases with and without mastoid involvement, the blood, pleural fluid, and spinal fluid gave positive cultures, especially when *Streptococcus hemolyticus* was the invading organism; and that edema of the brain, congestion of the cerebral vessels, and dilatation of the ventricles were associated with the pneumonia. This led to a more careful search for blood stream invasion in measles or pneumonia mastoiditis cases, especially when *Streptococcus hemolyticus* was the organism suspected. In three cases of measles mastoiditis resulting fatally, necropsy disclosed in the first a cerebellar abscess, in the second a diffuse meningitis (plastic) with frontal lobe abscess on the side of operation, and in the third a similar picture with the abscess of the frontal lobe on the opposite side. Cultures taken at necropsy showed *Streptococcus hemolyticus* in all tissues in each case. In none of these cases could any connection be found between the area of the operation and the meningitis.

The conclusion one must draw is that meningitis is not due to the mastoiditis but to the conditions present at the time of operation. For this reason a careful study of each case is essential: By gradual classification of the mode of onset, the type of mastoid structure, the character of the infection, and the degree of necrosis, together with a study of the blood invasion, a certain number of cases will be found that one may term dangerous. These cases are few in number but are usually fatal. The onset is slow, since they follow measles or pneumonia; they occur in mastoid Type 2; the source of infection is usually *Streptococcus hemolyticus;* bone necrosis occurs early and is extensive; the blood stream may show the presence of the organism; the brain may be congested, the cerebral vessels engorged and the ventricles dilated. Thus the groundwork has been laid for a meningitis. It requires only the trauma of the chisel or the anesthetic to complete the work. These are the problems that confront the surgeon.

CONCLUSIONS

1. The prevalence of mastoiditis in army cantonments is due to a number of reasons. The new surroundings of the recruit play some part in it and constitute a predisposing cause. The presence of a locality infection and epidemics of acute contagious diseases are the chief factors.

2. Invasion of the middle ear and mastoid cells may occur by extension from the nasopharynx or directly from the blood stream.

3. The anatomic structure of the mastoid body is of importance in the prognosis of each case. Roentgenoscopy will alone determine the character of the cell arrangement.

4. For clinical purposes, mastoids may be classified as Type 1 (Figs. 1 and 2) rudimentary or cell-free mastoids; Type 2 (Figs. 3 and 4) in which the cells are of the pneumatic variety and are found only below a horizontal line drawn through the upper margin of the meatal ring, as shown in the roentgenogram, and Type 3 (Figs. 5 and 6), showing small cells extending forward in the zygomatic region, high posterior cells, and many delicate cells in the tip. Type 1 mastoids rarely if ever develop acute mastoiditis, but the otitis media is the most marked of all types. In this class of cases, operation reveals the sinus clinging closely to the posterior wall. Type 2 is the most serious of the three and almost always requires operation. The cells of the tip and posteriorly are of the pneumatic type. The drainage is poor, and necrosis occurs early and may be fulminating in character. Type 3 is characterized clinically by an early tenderness over the entire mastoid area which subsides on the application of hot compresses. They drain easily and seldom require operation. Mastoiditis is associated with otitis media in only Types 2 and 3. As Type 1 may be due to faulty development or to an otitis media in early childhood, a large number of mastoids of this type are found. This accounts for many severe otitis media cases that show no clinical evidence of mastoiditis, although a high temperature and even chills may occur.

5. Bone necrosis is the one important sign in mastoiditis which must be carefully sought. Its presence makes operation imperative. It occurs in Type 2 with little or no clinical manifestation until the tip and posterior cells become necrotic. Fulminating signs then appear. When operation is indicated, it should be thorough.

6. Chloramin-T paste is a good dressing to use in the after-care of patients.

7. Blood stream invasion may cause the mastoiditis, and with it involvement of structures within the cranium. In such cases, meningitis may be hastened by a prolonged operation. So-called otitis meningitis is a very rare complication. Septic joints, pericarditis, meningitis, or abscess of the brain due to the primary invasion may develop, early or late, in the course of the illness. Sinus thrombosis is easily differentiated by the presence of the chill and the rapid rise and fall of temperature.

Health in Cumberland.—In the annual report number of the Cumberland (Maryland) *Health Bulletin* (April, 1919), Max J. Colton, health officer, in an address to the "Veterans of the World War," takes them into the health organization of Cumberland by appointing them deputies to assist in carrying out at home the principles of hygiene which they were taught in the Army. He says: "You want yourselves and your families protected from as much disease as possible," which "is no more than is due every citizen of a community. You yourself can help to bring the protection home. You can urge the members of your family to be vaccinated and inoculated, you can become the sanitary inspector of your home, see that the privy vault is flytight, that the garbage can is kept covered. If some one you know has a venereal disease, see that he secures treatment from a reputable physician, or from the clinic which is being operated in the city hall, where treatment can be secured free of charge, that the quarantine regulations be observed wherever a communicable disease exists, and, in a word, appoint yourself a guardian of the community." Cumberland with a population of 27,298 in 1918 had 736 births, an increase of eighty-two over the previous year, and the largest number of births in the history of the city. This gave a birth rate of 26.96 per thousand of population. There were 114 stillbirths. The total number of deaths not including the influenza epidemic, accurate figures for which are not yet available, was 578, a rate of 21.17 per thousand.

DUODENECTOMY

A NEW METHOD *

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AND
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During the course of some work on the nature of the toxemia in intestinal obstruction[1]—in which removal of varying lengths of the jejunum and the ileum produced no other effect than an easily explained nutritional disturbance—it was decided to take up later this problem: Is the duodenum one of the so-called vital organs, and if so, what is the nature of its vital function? Obviously, a successful duodenectomy would answer this question in part.

The duodenum—discovered and named by Herophilus—developed embryologically from the foregut, with its outbuds, the liver and the pancreas, is a most important part of the digestive system.

Anatomically, the duodenum in the dog, unlike that in man, is of the fetal type—mobile, and almost completely covered with peritoneum. Intimately connected to its medial border is the body of the pancreas. Its blood supply comes chiefly from the pancreaticoduodenal artery. The nerve supply is composed of extrinsic nerves of parasympathetic origin carried in the vagi, and nerves of sympathetic origin coursing in the splanchnics. The intrinsic nerves are the plexuses of Auerbach and Meissner. Compared with the remaining portion of the small intestine, the wall of the duodenum is thicker and more muscular and its lumen larger. The histologic structure of the duodenum of the dog, like that of man, is characterized by the presence of the large tubuloracemose glands of Brunner which occupy the submucosa.

Physiologically, the duodenum is the recipient of the chyme, the bile and the pancreatic juice. From its mucous membrane is secreted an enzyme, enterokinase, on which the pancreatic juice is dependent for its activation. Like the remainder of the intestine, it is an organ of absorption, secretion and excretion.

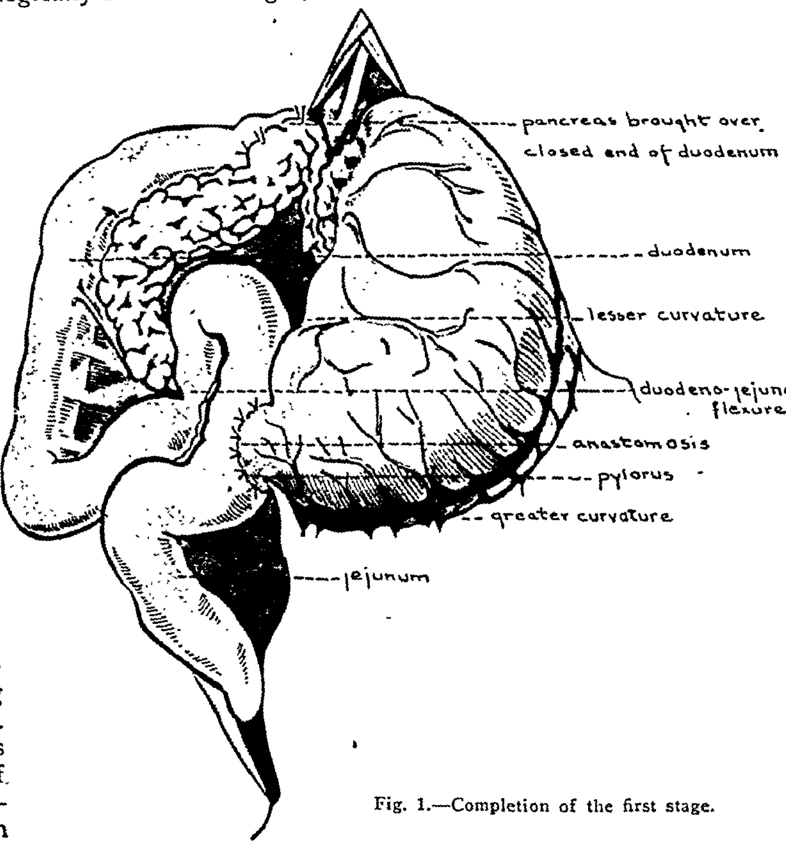

Fig. 1.—Completion of the first stage.

PREVIOUS WORK

Pflüger[2] concluded from work on the frog that diabetes followed injury to the nervous connections between the pancreas and the duodenum in attempts to extirpate the latter. Subsequent work on the duodenum of the dog reported in the foreign literature by Minkowski,[3] Rosenberg,[4] Ehrmann,[5] Lauwens[6] and Bickel[7] rendered this theory untenable.

Minkowski removed the splenic portion of the pancreas and anastomosed the jejunum to the posterior surface of the stomach. Subsequently the common bile duct and the pancreatic duct were ligated and divided and the gallbladder anastomosed to the jejunum. The pylorus was cut through and both ends closed. The duodenum, including the pancreas, except the uncinate process, was extirpated. One dog lived three weeks without becoming diabetic. This was the first successful duodenectomy.

Rosenberg, Ehrmann, Lauwens and Bickel report methods varying somewhat from the preceding, but having the same end in view.

The American investigators Matthews,[8] C. A. and L. R. Dragstedt, McClintock and Chase,[9] and Grey[10] have worked on the problem of duodenectomy.

Matthews concluded from his experiments that extirpation of the duodenum was incompatible with life longer than seventy-two hours.

C. A. and L. R. Dragstedt, McClintock and Chase of Iowa City had one dog live three months following duodenectomy. In this animal the bile was drained to the outside by a gallbladder fistula, and the body of the pancreas removed.

Grey of Baltimore was successful in one instance in which he preserved the bile by cholecystenterostomy and the pancreatic juice by transplantation of the pancreatic duct into the jejunum. The dog lived eight and one-half months.

Only a few attempts at such an operation were necessary to convince us that extirpation of the duodenum was attended with many difficulties not encountered in resection of other portions of the alimentary tract. Such difficulties gave rise probably to the supposed vital function of the duodenum.

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* From Hull Physiological Laboratory, University of Chicago. To Rollin H. Moser and Daniel W. Wheeler we extend thanks for helpful suggestions and actual cooperation and to Albert E. Welch for preparing the illustrations.

[1] Dragstedt, L. R.; Moorhead, J. J., and Burcky, F. W.: Intestinal Obstruction: An Experimental Study of the Intoxication in Closed Intestinal Loops, J. Exper. M. **25:** 421, 1917.

[2] Pflüger: Arch. f. d. ges. Physiol. **118:** 267, 1907.

[3] Minkowski: Arch. f. exper. Path. **58:** 271, 1908.

[4] Rosenberg: Arch. f. d. ges. Physiol. **121:** 358, 1908.

[5] Ehrmann: Arch. f. d. ges. Physiol. **119:** 295, 1907.

[6] Lauwens: Arch. f. d. ges. Physiol. **120:** 623, 1907.

[7] Bickel: Berl. klin. Wchnschr., 1909, XLVI, 1201.

[8] Matthews, S. A.: One of the Functions of the Duodenum, J. A. M. A. **55:** 293 (July 23) 1910.

[9] Dragstedt, C. A.; Dragstedt, L. R.; McClintock, J. T., and Chase, C. S.: Am. J. Physiol. **46:** 584 (Aug.) 1918.

[10] Grey, E. G.: Surg., Gynec. & Obst. **28:** 36 (Jan.) 1918.

The variety of methods found in a survey of the literature suggested the technical obstacles encountered in duodenectomy. After repeated attempts, extending over a period of several years, we have devised a method which has been attended with some success.

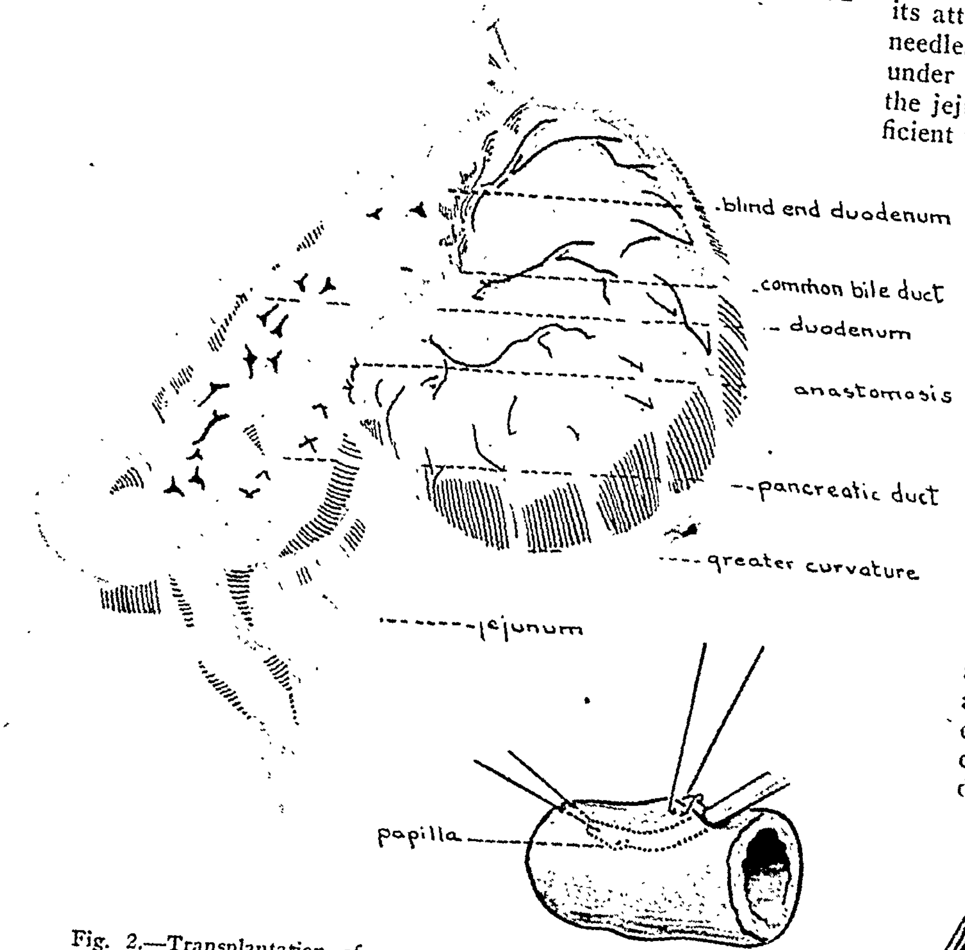

Fig. 2.—Transplantation of common bile duct and major pancreatic duct.

AUTHORS' METHOD

The operation is done in three stages:

1. The abdomen is opened through an incision 10 cm. in length starting midway between the ensiform cartilage and the right costal margin; the rectus muscle is displaced outward; the left index finger locates the hepatopyloric ligament, which is cut, and the finger is passed downward behind the pylorus; the greater omentum is drawn to the left and an opening made through an avascular space in the dorsal mesentery close to the edge of the pancreas; rubber-covered clamps are applied on each side of the pylorus and four ligatures tied (two above and two below); the pylorus is divided on a Kocher director.

The gastric end, which is covered with a warm pad, is laid aside. The mucosa of the duodenal end is dissected from the muscularis for a distance of about 3 cm., and this isolated portion removed. The serosa and the muscularis are infolded so that a portion of the pancreas covers the blind end. The transverse colon is located and drawn outward, carrying with it the first loop of the jejunum. This is brought up in front of the colon and anastomosed to the open pyloric end of the stomach, the proximal part of the bowel at the lesser curvature (Fig. 1). The abdomen is closed. A subcuticular stitch apposes the skin. No dressing is employed. Buttonhole silk is used exclusively in our work.

2. Two weeks later an incision similar to that described above opens the peritoneal cavity. The duodenum is picked up, and the common bile duct identified and excised from the duodenal wall. The mucosa of the excised portion is completely removed. The opening made is closed by Lembert sutures. Wirsung's duct, which is the accessory duct in the dog, is ligated and divided. The gastrojejunostomy is located and a small opening made in the jejunum about 3 cm. distal to the junction. The common bile duct with its attached duodenal wall, held by a thread armed with two needles, is drawn through an opening in the dorsal mesentery under the duodenum. These two needles are introduced into the jejunal opening, and emerge about 2.5 cm. distally. Sufficient traction is applied to draw the duct through the orifice, and the threads are tied on the serosa. One Lembert suture is used to effect closure around the duct.

The duct of Santorini is now found. Its usual location in the dog is at a point about 3 cm. proximal to the place where the pancreas turns away from the duodenum. This duct is transplanted by the same technic as is the common bile duct, about 5 cm. distal to the implantation of the common duct (Fig. 2). The omentum is carefully arranged and the abdomen closed.

3. Following an interval of fourteen days, the abdomen is opened for the third time through the right rectus abdominis. Multiple adhesions are commonly found. The blind duodenal end is sought and liberated sufficiently to allow its being brought to an accessible position. The bowel is opened longitudinally along the surface opposite the pancreas for a distance of about 8 cm. Long hysterectomy clamps are applied parallel to and about 2 cm. from the cut edge. With a sharp uterine curet the mucosa is completely removed. The wall is now divided immediately below the clamps and the remaining edges infolded with a continuous buttonhole stitch. Proceeding distally, this technic is repeated until a point 4 cm. below the duct-bearing portion of the duodenum is reached. Beyond this point a typical resection completes the duodenectomy (Fig. 3).

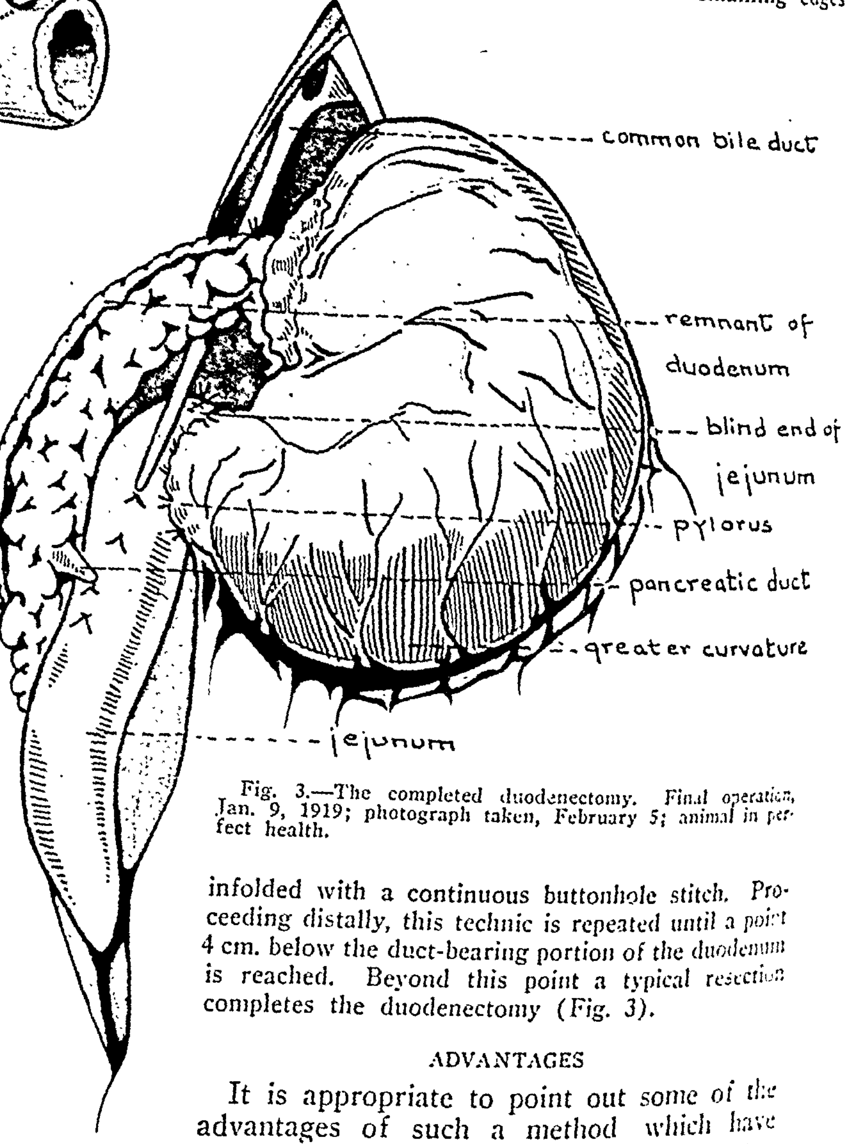

Fig. 3.—The completed duodenectomy. Final operation, Jan. 9, 1919; photograph taken, February 5; animal in perfect health.

ADVANTAGES

It is appropriate to point out some of the advantages of such a method which have been carefully worked out and compared with other procedures.

The gastro-enterostomy described in the first stage is superior to the usual operations because the junction is made at the true physiologic location, the pylorus. This region is undisturbed in the subsequent steps.

By our technic the biliary and pancreatic secretions are preserved. The jejunum is made to serve as a substitute for the duodenum in receiving the digestive juices. In a review of the literature we were unable to find a single instance in which both the common bile duct and the pancreatic duct had been successfully transplanted into the jejunum at one time. Cholecystenterostomy in the dog is frequently fatal. Cholecystogastrostomy disregards well established principles of digestion.

In our opinion the usual technic of intestinal resection cannot be applied to the duct-bearing portion of the duodenum. The final stage, as described, disturbs neither the pancreas nor the functioning alimentary tract, thus reducing to a minimum the after-effects of a severe operation.

CONCLUSIONS

1. The method described permits the complete removal of the duodenum in consecutive operations: (*a*) pylorectomy, closure of the duodenal end, and gastrojejunostomy; (*b*) transplantation of the common bile duct and the major pancreatic duct into the jejunum; (*c*) removal of the duodenum.
2. Dogs thus operated on will live in a normal state of health. The duodenum, therefore, is not essential to life.

ANTHRAX IN A SOLDIER

REPORT OF A FATAL CASE PROBABLY DUE TO INFECTION BY A SHAVING BRUSH *

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This is the third case of human anthrax at Camp Jackson in the past four months, the first two cases having been reported by Schultz.[1] In this case anthrax bacilli were isolated from a shaving brush made of badger's or of an imitation of badger's hair, and recently purchased by the patient. The case is thought worthy of record because of the interesting pathology, especially the presence of intestinal carbuncles, which are usually associated with infection by the intestinal route, and the complete bacteriologic and chemical findings.

REPORT OF CASE

History.—Private J. B., white, aged 21, was admitted to the base hospital of Camp Jackson, Nov. 21, 1918, complaining of slight headache, dizziness and backache. The previous medical history was negative. The patient was well nourished. He was not acutely ill, having on the neck above the thyroid cartilage an inconspicuous swelling without inflammatory areola, about 1 cm. in diameter, which according to the patient followed several days after the use of a new shaving brush. The latter was purchased for $1, and was said by the manufacturer to be sterile.

On admission the temperature was 100.2, pulse 96 and respiration 20. The leukocyte count was 11,200, of which 83 per cent. were neutrophils, 13 per cent. small mononuclears and 4 per cent. large mononuclears. The leukocyte count on the second day after admission was 24,000, of which 84 per cent. were neutrophils, 3 per cent. small mononuclears, 10 per cent. large mononuclears and 3 per cent. transitionals. On the same day a specimen of urine was positive for acetone, bile acids and bile pigments, and negative for diacetic acid. On the evening of the same day, the red cell count was 3,400,000. The leukocyte count was 31,000, of which 81 per cent. were neutrophils, 17 per cent. small mononuclears and 2 per cent. large mononuclears. The hemoglobin was 100 per cent. The blood at that time was dark and thick.

On the morning of November 23, three days after admission, the patient became nauseated and vomited a grumose material. The vomiting continued and was accompanied by severe epigastric pain. He shortly developed a cyanotic pallor and signs of circulatory collapse. The pulse was not obtained at the wrist, and the heart sounds were barely audible with the stethoscope. The respirations were irregular, somewhat rapid, and occasionally deep and sighing, suggestive of air-hunger. The lungs were clear. The abdomen was distended, tympanitic, and tender on palpation in the epigastrium. The spleen and liver were just palpable. The pupils reacted to light and accommodation. Rigidity of the neck, and the Kernig and Brudzinski signs were absent. Oppenheim's reflex was present on both sides. All the other reflexes were normal. The swelling on the neck had assumed the appearance of a granuloma, and the superficial chain of lymph glands along the anterior border of the right sternocleidomastoid muscle was enlarged. There was slight diffuse swelling over the area outlined by the right sternocleidomastoid muscle. Around the granuloma was noted what was suggestive of a margin of dry vesicles. The center of the lesion showed beginning black necrotic change. There was no pain nor tenderness about the lesion. A smear which was made from a freshly abraded surface showed organisms having the morphologic characteristics of the anthrax bacillus. The blood that exuded from the abraded surface turned black immediately.

The vomitus was positive for blood. Carbon dioxid determination of the blood plasma gave 43.8 per cent. by the method of Van Slyck and Cullen. At 2 p. m. a diagnosis of anthrax was reasonably established, and the patient was given intravenously 160 c.c. of antianthrax serum. No improvement occurred, and to counteract the acidosis determined to be present, 750 c.c. of a 4 per cent. sodium bicarbonate solution were given intravenously. The patient did not react but became progressively worse and died at 8:30 p. m., November 23.

Bacteriologic Examinations.—Shortly before noon, November 23, a smear made from the blood taken from the granuloma showed abundant, large gram-positive capsulated bacilli. In a hanging drop these grew into long filaments in less than an hour, showing the organism to be an aerobe. On blood-agar plates these bacilli developed into characteristic anthrax colonies. A smear from the lesion also showed cocci, which on plates proved to be *Staphylococcus aureus.* Three mice were inoculated, one subcutaneously and two intraperitoneally, with blood from the lesion. All three died within less than twenty-six hours. At necropsy all had numerous anthrax bacilli in the spleen, kidney, and heart's blood. Cultures from these organs all gave characteristic anthrax colonies. At the same time, November 23, two blood cultures taken from the patient—one in the morning and one in the afternoon—were positive for anthrax bacilli. At the time the latter was taken a plate was also made with the blood from the arm, and this gave approximately seventy colonies per cubic centimeter of blood.

Pathologic Examination.—This was made twelve hours after death. Extending from the granuloma on the neck beneath the sternum into the mediastinal tissues there was considerable edema of the tissues, which had a yellowish and gelatinous appearance. This edema to a lesser degree extended upward from the lesion along the right sternocleidomastoid muscle. There were 150 c.c. of dark yellowish fluid in the abdominal cavity. The pleural cavities were free from adhesions or fluid. The heart was normal. Beneath the pleura of both lungs there were numerous petechial hemorrhages, especially marked posteriorly and between the lobes. Both lungs were markedly congested, although no indication of consolidation was present. There was one small hemorrhage found in the liver beneath the capsule, 4 mm. in diameter. The spleen measured 12 by 14 by 2.5 cm. and was soft. The capsule was smooth, bluish, and free from adhesions. The tissue on section was red and pulpy. The congestion was so marked as to obscure the malpighian bodies. The stomach was filled with a dark coffee-ground material. The gastric mucosa was everywhere congested, but no hemorrhagic areas were noted. The omentum and mesentery were greatly thickened by a gelatinous condition of the tissues. The mesenteric lymph glands were enlarged and intensely hemorrhagic. There were five places in the ileum and two places in the descending colon which were red and edematous in appearance and approximately 6 cm. in diameter. Viewed from the mucosa surface these areas presented dilated vessels, at times accompanied by hemorrhage in stellate arrangement, the center of which was gray and nodular, the whole underlying the mucosa, except that in one place the central nodule was ulcerated. Smears from these nodules showed many bacilli. Otherwise, the intestinal walls appeared normal. There was no generalized hyperemia, nor were Peyer's patches conspicuous. The contents of the intestine were of interest. Normal light-brown feces in moderate quantity were found in the entire colon. Above the cecum for some distance, however, the contents were black and pasty. In the upper ileum, brown, normal fecal matter again was found. Above this again in the duodenum and upper jejunum there was found much black, tarry material. Cultures made from the heart's blood gave a pure culture of anthrax bacilli. Cultures from the spleen showed a few anthrax colonies.

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* From the base hospital laboratory.

[1] Schultz, O. E.: Two Cases of Human Antrax at Camp Jackson, J. A. M. A. **71**: 1571 (Nov.) 1918.

Fig. 1.—Intestinal carbuncle (Gram-Weigert stain); × 450.

Microscopic Examination.—The subcutaneous tissues were swollen and the tissue substance filled with a granular, eosin-stained, structureless material in which there was some fibrin. There was marked infiltration with polymorphonuclear leukocytes. The lungs showed the alveolar walls engorged with blood, oftentimes obliterating the alveoli, and in a few places the alveolar walls had ruptured, allowing the alveoli to be filled with red blood cells and a few white cells. The liver, kidneys and suprarenals showed parenchymatous degeneration. The hemorrhagic nodules found in the colon and ileum showed the intestinal wall densely infiltrated with red cells, fibrin and serum. The nuclear elements in these areas no longer took the hematoxylin stain. Numerous large gram-positive bacilli were demonstrated in the subcutaneous tissue, the mesenteric glands and the intestinal nodules by the Gram-Weigert method. A few scattering bacilli were found in the capillaries of the lungs, liver, kidneys and spleen.

Examination of Shaving Brush.—The bristles of the shaving brush recently purchased and used by this patient were washed in about 20 c.c. of physiologic sodium chlorid solution. This washing was centrifuged and the supernatant fluid decanted off and discarded. Fresh physiologic sodium chlorid solution was added to the sediment, and the operation repeated in order to free the sediment from soap. Smears of this sediment showed numerous bacilli but no typical anthrax bacilli. Inoculations of the sediment were made intraperitoneally into a guinea-pig and two mice. In the case of one mouse the inoculating material was first heated at 75 C. for two minutes, in order to reduce the number of organisms other than spores of anthrax. Both animals that received the unheated material died within about twenty-four hours. At necropsy neither showed anthrax bacilli either microscopically or culturally. The mouse receiving the heated material died about three hours later than the other two animals. Microscopic examination of the kidney tissue and of the heart's blood showed large gram-positive bacilli very similar to the anthrax bacillus. Cultures from the kidney showed a large gram-positive bacillus, the colonies of which were not anthrax-like. Inoculations from kidney or liver pulp made subcutaneously into a second mouse did not infect it. A second washing of the brush was made and a washed sediment obtained in a manner similar to that described above. All of this sediment was heated for two minutes at 75 C. Two mice were inoculated subcutaneously at the root of the tail with this sediment. One mouse died within forty-eight hours. Pure cultures of a gram-negative bacillus were obtained on culturing the organs of this mouse. The other mouse died after about seventy-two hours. Smears from the spleen, kidneys, and heart's blood of this mouse showed large gram-positive bacilli, morphologically *B. anthracis*. In a hanging drop this grew into long filaments within an hour. A plate made from the spleen pulp gave anthrax-like colonies, as well as numerous colonies of a comparatively small gram-negative bacillus. The heart's blood on a blood-agar slant

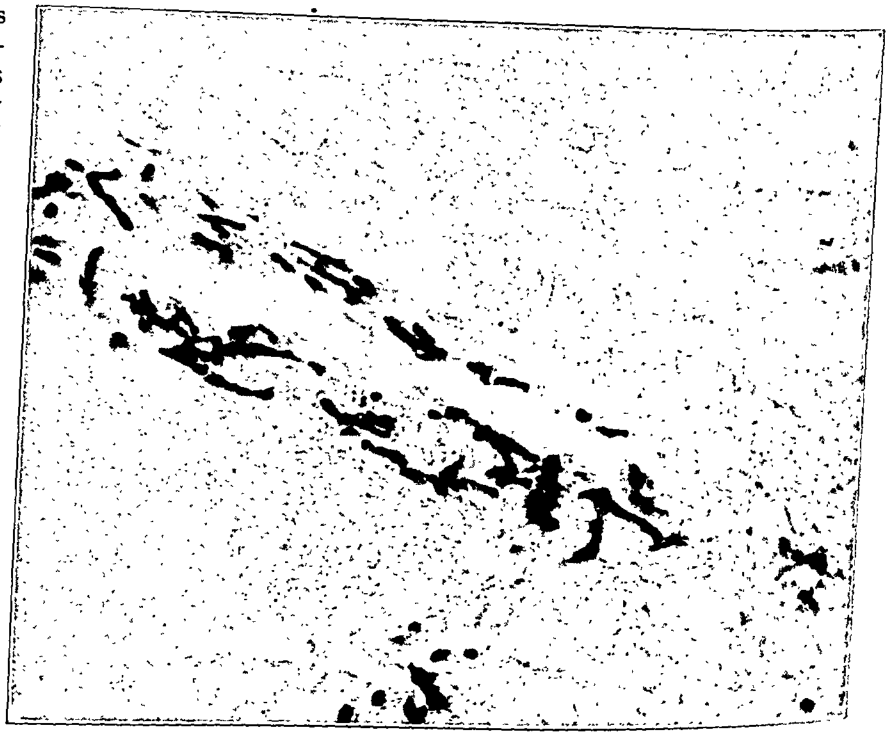

Fig. 2.—Skin carbuncle (Gram-Weigert stain); × 1,000.

gave a few anthrax colonies in pure culture. Material from an anthrax-like colony developed on the place cultivated from the spleen of this mouse was inoculated into another mouse subcutaneously at the root of the tail. This mouse died within twenty-four hours. Numerous bacilli were found in smears of all the organs. These were capsulated and had all the marks characteristic of the anthrax bacillus. Inoculations from the heart's blood, spleen, and kidney on blood-agar gave characteristic anthrax colonies in pure culture. Plates made directly from the heated and washed sediment obtained from the second washing of the shaving brush gave characteristic anthrax colonies mixed with those of numerous other bacteria. The morphology of the organisms of the anthrax-like colonies was typical of that of the anthrax bacillus.

CONCLUSIONS

1. An organism definitely shown to be the anthrax bacillus was found on a new shaving brush, the use of which was followed by a fatal infection. In all probability this brush was the source of the infection. Attention is, however, called to the possibility of the shaving brush being infected by the granuloma on the patient's neck.

2. The clinical course of the disease was such that the diagnosis could not have been made without the laboratory examinations.

3. Intestinal carbuncles may be formed by a blood-stream infection as well as by the alimentary route. Of course, there is a possibility of the anthrax bacilli having gained entrance to the mouth at the time of shaving. However, the intestinal lesions were all, except one, covered by intact mucosa. Attention is called to the fact that these were all recent lesions in the intestine. It appears that there is a definite tendency for anthrax infections to localize in the intestine no matter whether the infection takes place by the blood stream through the skin or the intestinal route.

DESIRABILITY OF CHANGING THE TYPE OF WRITTEN EXAMINATIONS*

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The purpose of medical education is not to produce walking encyclopedias of medical knowledge. While the acquisition of the rudiments of medical knowledge is a part of medical education and a somewhat important part, it is nevertheless true that the sum of medical knowledge is so vast that even were it desirable to attempt to teach it, it is not possible for any single human intellect to digest and retain it. Much more important in medical education than the acquisition of mere knowledge is the development of certain specific qualities and habits of thought, the summation of which may be described as the scientific habit of mind.

There is doubtless room for some difference of opinion as to the relative importance of the different mental qualities and attainments that are most desirable in a student of medicine. It is probable, however, that there is tolerably substantial agreement among medical educators as to what these qualities and attainments are. A student of any science must be acquainted with the technical language of that science. He should be able to spell that language correctly and he should possess sufficient mental clarity to enable him to express his views regarding a technical subject in clear and intelligible language. As he must absorb his knowledge from lectures, books and magazines, he should possess a critical faculty, and should be able to separate the wheat from the chaff. He should be able to interpret the various forms of graphic presentation that are used in medical science and practice, such as pulse tracings, physiologic tracings, statistical tables, temperature charts, and the like. He should be able to present his own ideas in graphic form when they relate to subjects capable of being expressed in that way. He should be able to gather facts, and he should be able to reason from facts. He should possess trained powers of observation, he should be able to concentrate on the work in hand, and he should possess the ability to put through any work assigned to him. He should possess health and vitality, and he should know how to keep these necessary attributes.

No one will deny the necessity of submitting the medical student and the recent medical graduate to definite tests in order to permit the university authorities, in the one case, or the state boards of examiners, in the other, to determine their fitness to practice medicine. It does not suffice for the universities or examining boards to lay down a certain course of study that must be pursued in order to graduate and obtain the right to practice. It is essential that the candidate who desires to apply his knowledge to the actual treatment of patients should prove that he or she has mastered to a sufficient degree the principles that underlie the science and art of medicine. Without the safeguard of licensing examinations, the public would be even less well protected than it is at present from fradulent practitioners and the half-baked followers of half-faked cults.

Assuming, then, that there is general agreement that tests of fitness are a necessity in connection with the practice of a profession like medicine, the question arises whether the present methods of testing fitness cannot be improved on. It may be pointed out, in the first place, that the tests applied by the medical schools are usually not the same as the tests applied by the state examining boards. The main distinction lies in the fact that the medical school takes cognizance of the daily work of the student. So far as I know, no state board of examiners pays any attention to this record. In the second place, the number of state boards that give practical examinations is much smaller than it ought to be. In the majority of instances the type of test on which ability to practice medicine is based is the written examination, and it is the written examination that this discussion mainly concerns.

TESTS OF MEMORY

As at present framed, most written examinations are tests of the ability of the individuals taking them to absorb and retain large quantities of knowledge for a brief period. In other words, they are memory tests. As a result of this it is perfectly possible for an individual with a retentive memory who has graduated from an inferior medical school to pass a brilliant examination. Indeed, it is an actual fact that there have been in the past graduates of schools which were practically quiz-compend institutions who were eminently successful in passing state board examinations and obtaining licenses to practice. While the great improvements in medical colleges in recent years renders this situation no longer likely to occur, it is nevertheless still true that most state board examinations put a premium on the individual with a retentive memory and an almost bovine aptitude for regurgitation.

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* Read before the Annual Congress on Medical Education and Licensure, Chicago, March 4, 1919.

A TEST OF DESIRABLE QUALITIES

The purpose of this communication is to suggest a new type of written examination which will test certain of the qualities that are desirable in medical students and medical practitioners, as well as testing their knowledge. In thinking over the list of desirable qualities mentioned in the early part of the paper, it is clear that not all of them can be tested by a written examination. Some of them must be tested by practical examinations, and can be tested only in that way. This is true particularly of the power of observation and the ability to put through various laboratory tests. There remain, after excluding the qualities that can be tested only in a practical way, certain qualities that can be tested in a written examination. These are:

1. Knowledge of the technical language of medicine.
2. Ability to express ideas graphically.
3. Ability to interpret ideas presented in graphic form.
4. Critical ability.
5. Ability to reason from facts.
6. Ability to present a subject in clear language.

METHOD OF APPLYING TESTS

The method of applying these different tests may be briefly described in order to indicate the practicability of such a written examination:

1. The test of ability to understand the technical language of medicine is obvious. It consists in presenting the student with a list of technical medical terms, beginning with easy terms and ending with the most difficult and requiring the student to define them.

2. The test of the student's ability to express ideas graphically may be illustrated by the following question recently asked in an examination of this sort:

> Draw a diagram illustrating the relationship existing between diseases of the bile passages and diseases of the pancreas. Letter and legend the diagram so as to convey your ideas.

3. The question covering the ability to interpret ideas graphically presented would vary in form according to the subject of the examination. In the case of a clinical subject, a record like a temperature chart could be presented with the request that the student describe and interpret the chart.

4. The test of critical ability consists in presenting to the student a brief quotation from some magazine article, preferably a quotation that contains both truth and fallacy. In this way the student is put in a position in which he must pass judgment on the validity of the statement. It is interesting to note in practice how quickly the individual whose tendency is to hedge can be separated from the students who have real critical ability.

5. The ability to reason from facts is one that is, of course, constantly used both in laboratory and in clinical work, and can best be tested by a method allied to that popularized by Cabot under the name of "case teaching." The student is presented with a history of an actual case, together with the more important clinical and laboratory findings, and is requested to draw his conclusions as to the nature of the case, giving his reasons.

6. Ability to present his ideas in clear language can be judged by a careful reading of the replies to the preceding questions. It is not necessary, of course, to have a special question for this purpose. Ability to spell correctly should perhaps be included as part of the test.

RATING OF QUALITIES

It goes without saying that the different qualities tested in this examination are not all of equal importance and should not all be rated equally. The rating that I have tentatively adopted is as follows:

Knowledge of the technical language, 10 points.
Ability to present ideas graphically, 10 points.
Ability to interpret ideas presented graphically, 10 points.
Ability to write clear English, 10 points.
Critical ability, 30 points.
Ability to reason from facts, 30 points.

The preparation of an examination of this kind, of course, requires more care and involves more expenditure of time than the preparation of the ordinary type of written examination. Any average practitioner can sit down with a textbook and prepare an examination of the ordinary type in a very short time. The extra expenditure of time is, however, compensated for by the much more satisfactory results obtained by the quality tests.

It is very interesting to observe the effect of such an examination on the rating of the students in a given class, as contrasted with the ratings under the old type of examination. The results at once make clear why it is that some men who, during their student career, do not appear to possess more than average ability, during their career as practitioners achieve a degree of success much greater than their teachers expected. A test of this sort shows that some of the most brilliant parrots in a class possess no critical faculty, and that their power of reasoning from facts may be decidedly mediocre. On the other hand, a man who has little capacity for memorizing may in an examination of this sort prove to have excellent critical faculty and a logical mind capable of drawing correct conclusions from the facts presented.

It may be pointed out that this type of examination is applicable to any subject. Each subject has, of course, its own technical languarge in addition to the common language of medicine. Each subject has aspects that can be graphically presented. The literature of each subject must of necessity be subjected to critical analysis, and the facts in connection with each subject must be interpreted after they have been elicited.

CONCLUSION

It is freely acknowledged that the ideas contained in this paper are not original. This is merely an attempt to work out a practical method along lines which have been suggested by the psychologists and have actually been in use in technical schools. Nor is it claimed that the plan suggested is anything more than a beginning. It is quite possible that I have entirely overlooked certain qualities that might be tested in this way, and it is more than likely that the method can be brought to a much higher degree of perfection. My main purpose in this paper is to emphasize the fact that no one kind of test is sufficient to provide a fair basis for the graduation or licensing of physicians, that the daily work of the individual should be taken into account even by state boards of examiners, that practical examinations are absolutely essential, and that the present type of written examination puts a premium on a type of mind that is not particularly desirable in medicine, and is a test of memory rather than a test of desirable qualities. Actual experience with the type of written examination suggested shows that the plan is entirely feasible and that it fulfils the purposes for which it was designed.

PRIMARY AND POSTINFLUENZAL PNEUMONIA

A COMPARISON OF THE LABORATORY FINDINGS

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This report is based on the laboratory findings, tabulated in summarized form, of two series of pneumonia cases occurring in the base hospital at Camp Cody. One series consists of 178 cases of primary[1] pneumonia admitted between May 1 and Oct. 1, 1918. The other consists of 624 cases of postinfluenzal pneumonia occurring between Oct. 1 and Dec. 1, 1918.

TABLE 1.—MORBIDITY AND MORTALITY INCIDENCE

Primary Pneumonia	Postinfluenzal Pneumonia
Period of time:	
May 1 to Oct. 1, 1918 (5 months).	Oct. 1 to Dec. 1, 1918 (2 months)
Number of cases:	
178 cases, of which 7 were postoperative, 2 posttraumatic.	624 cases developing out of 3,265 influenzas.
Clinical diagnosis:	
Lobar pneumonia, 123 cases; bronchopneumonia, 55 cases.	624 cases, all diagnosed bronchopneumonia, postinfluenzal.
Mortality:	
20 deaths; 11.23%.	240 deaths; 38.4%.
Approximate number of troops in camp:	Oct. 1 to Nov. 1, 1918, 4,500.
May 1 to June 1, 1918, 21,000...	Nov. 1 to Dec. 1, 1918, 10,000.
June 1 to July 1, 1918, 27,000..	
July 1 to Sept. 1, 1918, 32,000...	
Sept. 1 to Oct. 1, 1918, 5,000...	

TABLE 2.—COMPLICATIONS IN WHICH BACTERIOLOGIC INVESTIGATIONS WERE MADE

Primary Pneumonia	Cases	Pr. Ct.	Postinfluenzal Pneumonia	Cases	Pr. Ct.
Empyema:					
Incidence: 12 empyemas out of 178 pneumonias 6.8%			Incidence: 65 empyemas out of 624 pneumonias 10.4%		
Bacteriology of 12 exudates.			Bacteriology of 60 exudates.		
Pneumococcus	2*	16.6*	Pneumococcus	25*	41.1*
Type I	2	...	Type II atypical	12	...
			Type III	2	...
			Type IV	11	...
Streptococcus	10*	83.3*	Streptococcus	23*	38.3*
Hemolytic	7	...	Hemolytic	4	...
Nonhemolytic	3	...	Nonhemolytic	19	...
			Mixed	12*	20.0*
			Strepto. hem. and Pneum. III	3	...
			Strepto nonhem. and Pneum.	7	...
			Strepto. hem. and Pneum. IV	2	...
Meningitis:					
Incidence: 1 case out of 178 pneumonias 0.6%			Incidence: 7 cases out of 624 pneumonias 1.1%		
Bacteriology			Bacteriology.		
Pneumococcus:			Pneumococcus	6*	85.7*
Type I	1	100.00	Type II atypical	3	...
			Type III	1	...
			Type IV	2	...
			Streptococcus:		
			Hemolytic	1	14.3

* Subtotals.

In order to present the comparison more clearly, the summarized findings of the two series of cases will be placed side by side. On the left hand will appear data pertaining to the primary pneumonias, while on the right hand, and directly opposite, will appear data of the same character applying to the postinfluenzal pneumonias. The figures given in the accompanying tables are derived almost entirely from daily laboratory records. No effort is made to coordinate the laboratory and the clinical features. In fact, the primary object of this report is to present a brief, concise comparison of the results of certain common laboratory investigations in two series of cases.

TABLE 3.—BLOOD EXAMINATIONS

Primary Pneumonia	Cases	Pr. Ct.	Postinfluenzal Pneumonia	Cases	Pr. Ct.
Blood cultures:					
Number of cultures 164			Number of cultures 248		
Organisms recovered in 34 cases 20.7%			Organisms recovered in 4 cases 1.6%		
Pneumococcus	30*	89.0*	Pneumococcus	3*	1.2*
Type I	19	...	Type I	1	...
Type II	2	...	Type II	1	...
Type II atypical	1	...	Type II atypical	1	...
Type III	1	...			
Type IV	4	...			
Types I and II	1	...			
Types I and II atypical	1	...			
Types II and III	1	...			
Streptococcus	4*	11.0*	Streptococcus	1*	0.4*
Hemolytic	2	...	Hemolytic	1	...
Nonhemolytic	2	...			
Leukocyte counts:					
Average leukocyte count in 176 cases 21,830			Average leukocyte count in 350 cases 9,480		
8,000 or under	6	3.4	8,000 or under	203	58.0
8,000 to 12,000	12	6.8	8,000 to 12,000	53	15.1
12,000 to 25,000	90	51.1	12,000 to 25,000	82	23.5
Over 25,000	68	38.7	Over 25,000	12	3.4

* Subtotals.

TABLE 4.—SPUTUM EXAMINATIONS

Primary Pneumonia	Cases	Pr. Ct.	Postinfluenzal Pneumonia	Cases	Pr. Ct.
Sputums:					
Number of sputum examinations, 204 (in total of 156 cases).			Number of sputum examinations, 365 (in total of 348 cases).		
Pneumococcus	104*	66.7*	Pneumococcus	216*	62.0*
Type I	43	27.6	Type I	9	2.6
Type II	21	13.5	Type II	7	2.0
Type II atypical	10	6.4	Type II atypical	24	6.9
Type III	8	5.1	Type III	14	4.0
Type IV	22	14.1	Type IV	162	46.5
Streptococcus	27*	17.2*	Streptococcus	91*	26.0*
Hemolytic	22	14.1	Hemolytic	37	10.6
Nonhemolytic	5	3.1	Nonhemolytic	54	15.4
Mixed	25*	16.1*	Reports unsatisfactory for classification	41*	11.8*
Type I and Strept. hem.	7	4.5			
Type II and Strept. hem.	4	2.5			
Type III and Strept. hem.	1	0.6			
Type IV and Strept. hem.	13	8.5			

* Subtotals.

It may be stated, by way of explanation, that the laboratory personnel and the technical methods employed during the seven months in which these studies were in progress remained practically the same throughout. Whatever technical errors have been made are proportionately common in both series. For the sake of efficiency in the laboratory, and of conformity in results, the examinations were carried out in a routine manner. Blank outlines indicating the data desirable for each kind of specimen were filled out as the examination of the specimen progressed.

The actual technic of the laboratory investigations has become too well known and standardized, I believe, to require a detailed description here. In general, the sputum "typings" were carried out according to the methods of Cole, Dochez and Avery. Avery's pneumococcus culture medium and his mouse inoculations were both used in the typing of practically all sputums and exudates. By means of blood agar pour plates, streptococci were differentiated into hemolytic and nonhemolytic groups. The blood cultures were made by inoculating 180 c.c. of bouillon with about 15 c.c. of blood, and were examined at twenty-four hour intervals for three or four days.

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[1] In this report the word "primary" signifies ordinary clinical lobar pneumonia or bronchopneumonia.

COMMENT

It will be seen in Table 1 that approximately three and one-half times as many cases of pneumonia developed during the two months of the influenza epidemic as occurred in the camp during the five preceding months, although the number of troops averaged less than one third during the epidemic. The mortality rate in the postinfluenzal pneumonias was nearly three and one-half times that of the primary pneumonias.

Of the complications shown in Table 2, the incidence of empyema and meningitis was approximately twice as great in the influenzal pneumonia series. The bacteriology of the exudates differed considerably in the two series, as shown in the table.

Positive blood cultures were obtained in 20.7 per cent. of the primary pneumonias, but in only 1.6 per cent. of the influenzal pneumonias; a proportion of 13 : 1. The average leukocyte count in the latter series was considerably less than one half that of the former. Ten and two-tenths per cent. of the primary pneumonias gave a leukocyte count of 12,000 or under, whereas 73.1 per cent. were under 12,000 in the influenzal series.

In Table 4 there is shown a marked difference in the results of sputum "typings." Types I and II pneumococci occurred in 41.1 per cent. of the sputums from cases of primary pneumonia, whereas the same types were found in only 4.6 per cent. of the postinfluenzal cases. Type II atypical and Type III were of about equal ocurrence. Group IV was found in 14.1 per cent. of the primary pneumonias and 46.5 per cent. of the postinfluenzal pneumonias. The hemolytic group of streptococci was encountered more frequently in the primary cases; the nonhemolytic group in the other series.

NOMENCLATURE OF HUMAN ISOHEMAGGLUTINATION GROUPS

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In the course of a series of cross agglutinations in order to secure known Group II and Group III serum to keep on hand for grouping individuals for blood transfusions, it became apparent that two systems of designating the four different isohemagglutination groups of men are in use. Few authors[1] refer to the two systems, and the author of the older one is seldom mentioned. While the matter is of little practical importance, it may not be without interest to call attention to the two systems of naming the groups.

The older classification since the existence of four groups has been recognized is that of Jansky.[2] Among others who follow it are Ottenberg,[3] Zinsser,[4] Meleney, Stearns, Fortuine and Ferry,[5] and Edition 1 of the "Laboratory Methods of the United States Army."[6] Here the most common group, the one whose serum is the most agglutinative and whose cells are never agglutinated, is called I. The least common group, the one whose serum never agglutinates and whose corpuscles are always agglutinated except by its own serum, is called IV. Groups II and III embrace those persons whose serum agglutinates each other's cells and the cells of Group IV, but not the cells of Group I, and whose cells are agglutinated by each other's serum and by the serum of Group I and not by that of Group IV. The most commonly encountered of the two reciprocal Groups II and III is designated by Jansky and by every other writer as Group II, and the one less frequently encountered as Group III. Jansky's Groups I, II and III correspond to Groups I, II and III of Hektoen[7] and other early workers when *only three* groups were recognized.

The other system of numbering the groups is that of Moss.[8] Among others who follow it are Sanford,[9] Stitt,[1] Drinker and Brittingham,[10] and Edition 2 of the "Laboratory Methods of the United States Army." Here the common and strong group is designated as IV, the rare and weak group as I. Groups II and III have the same significance with Moss as with Jansky.

The arguments for following the Jansky classification are its priority, and its rational method of numbering the groups inversely according to their frequency of occurrence. The argument for following the Moss classification is its apparently wider adoption.

Explanatory or partially explanatory words might be used with propriety for designating the groups, such as sthenic and antisthenic for Jansky's Groups I and IV, and parasthenic and antiparasthenic for Groups II and III.

Walter Reed General Hospital.

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Vaccine Treatment of Otitis Media.—In the *Japan Medical World,* Jan. 26, 1919, p. 267, T. Tanaka reports good results from autogenous vaccines made from secretions from the ear or even from the nose if the ear is not discharging. The treatment is effectual in the acute phase or as the otitis is just passing into the chronic stage. The vaccine therapy is peculiarly effectual in otitis media in infants, and the author emphasizes the importance of curing the disease in this early stage as there is no doubt that otitis media in adults is often the result of infectious processes in childhood. The severe pain of otitis media in infants, it is stated, abates and the pathologic process is arrested under the vaccine treatment. The author says that the importance of this is evident as we realize that the staphylococcus, the germ usually involved after the process has persisted for any length of time, is particularly destructive of bone tissue. Ordinary symptomatic treatment does not reach the remoter regions of the lesions, and the destructive process may continue in the depths without any clinical manifestations, while the effect of the vaccine is felt at all depths. The cure is complete under five or six injections, namely, in ten or twelve days; the discharge usually ceases in four or six days. He uses 0.3 mg. of bacteria per cubic centimeter of the physiologic saline, heating this suspension to 30 C. for thirty minutes. After heating, phenol is added to make a 0.5 per cent. solution. In acute cases the intervals are forty-eight hours; in the chronic cases, two or three days. The initial injection dose is 0.1 or 0.15 c.c. for infants and 0.25 for adults, increasing the doses until 1 c.c. is reached, and then recommencing with the inital dose. Tanaka reports an apparently complete cure in 95 per cent. of the acute cases in infants and in 75 per cent. of the chronic cases.

Special Article

HOSPITAL SERVICE IN RURAL COMMUNITIES

A PRELIMINARY REPORT

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INTRODUCTORY

Public health and sanitation received their first impetus in the urban centers, and quite naturally so, for here the need was greatest. Such extraordinary progress has since been made that the city can claim precedence over the once much vaunted health of the open country. Both old and young in our urban centers live longer and suffer less from sickness than do the inhabitants of the rural regions.

The great national conservation and country life investigations were strong recent influences which brought to the foreground the problem of rural sanitation. Medical inspection of schoolchildren in both urban and rural regions has added many definite data.

Hospitals and health, in almost as intimate a manner as physicians and health, have always been closely associated in the public mind. It was quite natural, therefore, that the rural hospital problem should come to the fore with the rural health problem. Country people have in the past been peculiarly removed from proper hospital care, with consequent unnecessary loss of life and health. Consciousness of this fact has gradually permeated from the medical profession and public health officers to the general population. With it has come the modern movement for rural hospitals based in growing degree on public demand rather than on professional insistence.

But while this educational enlightenment was taking place, the relation of country and city changed markedly. Automobiles, telephones, good roads, motor ambulance service, and other improvements in communication and transportation have done much to span the chasm between the farm-house and the city hospital.

The administration of the first scattered rural hospitals quickly demonstrated the fact that these hospitals must of necessity be of an entirely different type from the city institution. While this would seem self-evident, it is, nevertheless, interesting to record that desperate efforts have been made in the past, and even now are being made, to pattern the rural hospital after its city prototype and to make it express in its routine the large aims of the city institution: treatment of the sick; provision of educational facilities for medical students; investigation of disease; and, more latterly, social service in health for the population with which the city hospital comes in contact.

Gradually it has come to be recognized that the rural hospital can never aspire to the form of service rendered by the city hospital. Adequate treatment of the sick is circumscribed by difficulty in getting proper buildings, efficient staffs of physicians, and well-trained nurses. Educational work is seriously limited by scarcity of clinical material. Research is largely out of the question for the same reason, and because of lack of proper equipment and of ability on the part of staff members to do that kind of work successfully. Lack of vision in some cases, and lack of assistance in others, has prevented social work by rural hospitals, which has distinct possibilities, from assuming the importance that it deserves.

Constantly improving means of communication and transportation are drawing a steadily increasing proportion of country cases to city hospitals. This, coupled with the obvious fact that the ideals of the city hospital are not attainable in the country, has forced supporters of the rural hospital movement to seize on some new idea to justify the community hospital. The original functions of a hospital, as outlined above, have been put more and more into the background, whereas the idea that the rural hospital should be above all else an *educational institution*, through which the community may be taught the fundamentals of hygiene and right living, has been steadily given more prominence. Coupled with this has come the suggestion that the rural hospital may be made a useful mechanism in surveying community conditions and needs in matters of health and sanitation.[1]

A shifting of the aim and purpose of the rural hospital from distinctly hospital service to the educational field raises a number of serious questions which should be answered before too great an impetus is given to this new aspect of the movement. Is it necessary to proceed with the construction of a relatively expensive building and to provide for its maintenance from year to year in order that its halls may be made the nucleus for an educational movement? Is this the most economical and efficient, or even indispensable method for educating a community in matters of health and sanitation?

To what extent is the rural nurse an effective entering wedge for public health work? Should the whole-time health officer properly follow the nurse when public appreciation of greater expenditures has been secured through the work of a nurse? May the rural hospital problem shape itself very differently in terms of need for hospital service after a nurse and health officer have been active in a community for some years, and after public and private health services and needs have been determined and correlated?

Attention must also be given to the relation of the rural hospital to a general community health program. And what is the relation of such a health program to other programs of local government and welfare service? The hospital represents merely one factor in public health work and private medicine. Public health work again is but one factor in the general program of public administration. One must needs keep in mind that funds must be provided by a community for the financing of all its various public services; for the general government purposes of the legislative, executive and judicial departments; and for the special services of protection of persons and property, of education, of recreation, of charities and corrections, of highways, and last, though by no means least, of health, sanitation, and hospitals.

Hospitals and other institutions are being maintained or, where lacking, their maintenance is being urged, for the care of the insane and the feebleminded, for

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[1] See in this connection editorial in the Modern Hospital, April, 1919.

COMMENT

It will be seen in Table 1 that approximately three and one-half times as many cases of pneumonia developed during the two months of the influenza epidemic as occurred in the camp during the five preceding months, although the number of troops averaged less than one third during the epidemic. The mortality rate in the postinfluenzal pneumonias was nearly three and one-half times that of the primary pneumonias.

Of the complications shown in Table 2, the incidence of empyema and meningitis was approximately twice as great in the influenzal pneumonia series. The bacteriology of the exudates differed considerably in the two series, as shown in the table.

Positive blood cultures were obtained in 20.7 per cent. of the primary pneumonias, but in only 1.6 per cent. of the influenzal pneumonias; a proportion of 13:1. The average leukocyte count in the latter series was considerably less than one half that of the former. Ten and two-tenths per cent. of the primary pneumonias gave a leukocyte count of 12,000 or under, whereas 73.1 per cent. were under 12,000 in the influenzal series.

In Table 4 there is shown a marked difference in the results of sputum "typings." Types I and II pneumococci occurred in 41.1 per cent. of the sputums from cases of primary pneumonia, whereas the same types were found in only 4.6 per cent. of the postinfluenzal cases. Type II atypical and Type III were of about equal ocurrence. Group IV was found in 14.1 per cent. of the primary pneumonias and 46.5 per cent. of the postinfluenzal pneumonias. The hemolytic group of streptococci was encountered more frequently in the primary cases; the nonhemolytic group in the other series.

NOMENCLATURE OF HUMAN ISOHEMAGGLUTINATION GROUPS

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In the course of a series of cross agglutinations in order to secure known Group II and Group III serum to keep on hand for grouping individuals for blood transfusions, it became apparent that two systems of designating the four different isohemagglutination groups of men are in use. Few authors[1] refer to the two systems, and the author of the older one is seldom mentioned. While the matter is of little practical importance, it may not be without interest to call attention to the two systems of naming the groups.

The older classification since the existence of four groups has been recognized is that of Jansky.[2] Among others who follow it are Ottenberg,[3] Zinsser,[4] Meleney, Stearns, Fortuine and Ferry,[5] and Edition 1 of the "Laboratory Methods of the United States Army."[6] Here the most common group, the one whose serum is the most agglutinative and whose cells are never agglutinated, is called I. The least common group, the one whose serum never agglutinates and whose corpuscles are always agglutinated except by its own serum, is called IV. Groups II and III embrace those persons whose serum agglutinates each other's cells and the cells of Group IV, but not the cells of Group I, and whose cells are agglutinated by each other's serum and by the serum of Group I and not by that of Group IV. The most commonly encountered of the two reciprocal Groups II and III is designated by Jansky and by every other writer as Group II, and the one less frequently encountered as Group III. Jansky's Groups I, II and III correspond to Groups I, II and III of Hektoen[7] and other early workers when only three groups were recognized.

The other system of numbering the groups is that of Moss.[8] Among others who follow it are Sanford,[9] Stitt,[1] Drinker and Brittingham,[10] and Edition 2 of the "Laboratory Methods of the United States Army." Here the common and strong group is designated as IV, the rare and weak group as I. Groups II and III have the same significance with Moss as with Jansky.

The arguments for following the Jansky classification are its priority, and its rational method of numbering the groups inversely according to their frequency of occurrence. The argument for following the Moss classification is its apparently wider adoption.

Explanatory or partially explanatory words might be used with propriety for designating the groups, such as sthenic and antisthenic for Jansky's Groups I and IV, and parasthenic and antiparasthenic for Groups II and III.

Walter Reed General Hospital.

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[1] Stitt, E. R.: Practical Bacteriology, Blood Work, and Animal Parasitology, Ed. 5, 1918, p. 244. Kolmer, J. A.: A Practical Text-Book of Infection, Immunity and Specific Therapy, Ed. 2, 1917, pp. 286, 287.

[2] Jansky, Jan: Sbornik klinicky, Arch. bohèmes de méd. clin. **8**: 85-139, 1907.

[3] Ottenberg, Reuben: J. Exper. M. **13**: 425-438, 1911.

[4] Zinsser, Hans: Infection and Resistance, Ed. 2, 1918, p. 238.

[5] Meleney, H. E.; Stearns, W. W.; Fortuine, S. T., and Ferry, R. M.: Am. J. M. Sc. **154**: 733 (November) 1917.

[6] Laboratory Methods of the United States Army, Medical War Manual 6, 1918, p. 15.

[7] Hektoen, Ludvig: J. Infect. Dis. **4**: 297-303 (June 15) 1907.

[8] Moss, W. L.: Bull. Johns Hopkins Hosp. **21**: 63-70 (March) 1910.

[9] Sanford, A. H.: A Modification of the Moss Method of Determining Isohemagglutination Groups, J. A. M. A. **70**: 1221 (April 27) 1918.

[10] Drinker, C. K., and Brittingham, H. H.: The Cause of the Reactions Following Transfusion of Citrated Blood, Arch. Int. Med. **23**: 133-149 (February) 1919.

Vaccine Treatment of Otitis Media.—In the *Japan Medical World*, Jan. 26, 1919, p. 267, T. Tanaka reports good results from autogenous vaccines made from secretions from the ear or even from the nose if the ear is not discharging. The treatment is effectual in the acute phase or as the otitis is just passing into the chronic stage. The vaccine therapy is peculiarly effectual in otitis media in infants, and the author emphasizes the importance of curing the disease in this early stage as there is no doubt that otitis media in adults is often the result of infectious processes in childhood. The severe pain of otitis media in infants, it is stated, abates and the pathologic process is arrested under the vaccine treatment. The author says that the importance of this is evident as we realize that the staphylococcus, the germ usually involved after the process has persisted for any length of time, is particularly destructive of bone tissue. Ordinary symptomatic treatment does not reach the remoter regions of the lesions, and the destructive process may continue in the depths without any clinical manifestations, while the effect of the vaccine is felt at all depths. The cure is complete under five or six injections, namely, in ten or twelve days; the discharge usually ceases in four or six days. He uses 0.3 mg. of bacteria per cubic centimeter of the physiologic saline, heating this suspension to 30 C. for thirty minutes. After heating, phenol is added to make a 0.5 per cent. solution. In acute cases the intervals are forty-eight hours; in the chronic cases, two or three days. The initial injection dose is 0.1 or 0.15 c.c. for infants and 0.25 for adults, increasing the doses until 1 c.c. is reached, and then recommencing with the inital dose. Tanaka reports an apparently complete cure in 95 per cent. of the acute cases in infants and in 75 per cent. of the chronic cases.

STATE BOARD STATISTICS FOR 1918

PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1138 to 1147 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1918. Full reports were obtained from all state licensing boards and were carefully verified.

Tables A and B, when read from left to right, show for each medical college named (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of that school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total numbers examined, registered and rejected, and (*j*) the percentage of rejections. The majority of graduates take the license examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, several factors should be kept in mind. The number examined is important, since, if all other conditions are equal, the larger the number of graduates examined, the more accurate is the finding. But other conditions are seldom equal. The number of states in which a school's graduates have been examined is important. The larger this number, the more accurate will be the conclusions. Again, the character of the board making the examination and the methods employed are important factors to be considered, since some boards refuse to examine graduates of inferior medical colleges, while others (see Table I) not only examine graduates of all medical colleges but also admit osteopaths to the physician's and surgeon's examination. Some boards also hold careful examinations which include practical laboratory and clinical tests, or they mark the papers more severely, while others, especially partisan boards, are very lenient. Although conditions are undergoing a steady improvement, it is still true that the character of the license examinations as usually conducted is much more lenient than the examinations required in other countries. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D.

Graduates of All Years Examined in 1918

Table A shows the results for all candidates who took examinations in 1918, regardless of the years in which they graduated. This shows that altogether 3,637 candidates were *examined* last year, as compared with 4,730 in 1917, 4,850 in 1916, 5,313 in 1915 and 5,570 in 1914. There has been a steady decrease each year since 1906, when 8,035 physicians were examined. The decrease each year has been due largely to (*a*) the larger registration through reciprocity, and (*b*) the general diminution in the number of medical colleges, students and graduates. The marked diminution this year is due to the enlistment of so many physicians for military medical service. Of those examined this year, 13.3 per cent. failed, as compared with 14.1 per cent. in 1917, 15 per cent. in 1916, 15.6 per cent. in 1915 and 21.6 per cent. in 1914. This reduction in the percentages of failures indicates improved medical teaching, since there are reasons to believe that methods of examination have not been relaxed.

There were 80 medical colleges in the United States granting degrees in 1918 which had graduates examined, as compared with 89 in the years 1917 and 1916, 93 in 1915 and 96 in 1914. There has been a decrease of 73 since 1905, when graduates from 153 medical colleges were examined. The statistics covering schools which have ceased to exist are included in the line for "miscellaneous colleges."

Graduates of Canadian schools were examined in twelve states, more appearing, naturally, in the border states. The figures for the Canadian colleges are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether, 29 candidates from Canadian colleges were examined, of whom 11, or 37.9 per cent., failed. Foreign graduates were examined in 14 states, the total number being 45, and of his number 17, or 37.8 per cent., failed. In 1917 there were 79 foreign graduates examined. The largest number of foreigners examined in any state in 1918 was 10 in New York, where 8, or 60 per cent., failed.

Undergraduates and Osteopaths Examined During 1918

For the last three years the few undergraduates examined have been accidental instances due evidently to imperfect credentials. In 1906, there were 703 undergraduates examined, and 342 were licensed. Colorado is now the only state which will knowingly admit nongraduates to its examinations, but only four have been licensed in that state in twelve years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete. At present, however, some boards are registering as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges—no one of which compares favorably with even the lowest grade Class C medical college—even though two of these states—Colorado and Texas—refuse to recognize Class C medical schools! (See Table D on page 1148).

During 1918, in California, 133 graduates of osteopathic colleges were admitted to the regular examination for licenses as physicians and surgeons, and of this number 77, or 58.3 per cent., were granted licenses. Of the total examined, 58 were given merely an oral examination, and of this number, 34, or 58.6 per cent., were registered. In Colorado, of 26 osteopaths examined, 21, or 80.8 per cent., were granted licenses as physicians and surgeons (see Tables H and I).

Recent Graduates Examined During 1918

Table B gives the results for graduates of 1914 to 1918, inclusive, examined during 1918. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1918, 2,984, or 82.1 per cent., were recent graduates, and of this number, 9.3 per cent. failed, as compared with 13.3 per cent. for all candidates.

Old Practitioners Examined During 1918

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1913 and previous years (third column), and for graduates of 1918 (fourth column). Of the graduates of 1913 and previous years—"old practitioners"—479 were examined, and of this number 146, or 30.5 per cent., failed, as compared with 9.3 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are commonly required to take the same examination as recent graduates. Justice to these older physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for interstate reciprocity in medical licensure; for the use of practical examination by which they

CONTINUED ON PAGE 1150

TABLE A—PHYSICIANS EXAMINE

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Alaska		3 Arizona		4 Arkansas		5 California		6 Colorado		7 Connecticut		8 Delaware		9 Dist. Columbia		10 Florida		11 Georgia		12 Idaho		13 Illinois		14 Indiana		15 Iowa		16 Kansas		17 Kentucky		18 Louisiana		19 Maine		20 Maryland		21 Massachusetts	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P.	F	P	F	P	F	P	F	P	F	P	F
	ALABAMA																																										
1	University of Alabama School of Medicine	11	0									0	1																														
	ARKANSAS																																										
2	University of Arkansas Medical Department	0	1			1	0	21	1											0	1																						
	CALIFORNIA																																										
3	College of Medical Evangelists									21	0	1	0													1	0																
4	College of Physicians and Surgeons, Los Angeles					3	0			23	3			1	1																												
5	College of Physicians and Surgs., San Francisco									22	5																															1	0
	Hahnemann Medical College of the Pacific					1	0			8	2																																
	eland Stanford Junior Univ. School of Medicine									6	0																																
	kland College of Medicine and Surgery									4	0																																
	iversity of California Medical School					1	0			21	0																																
	COLORADO																																										
10	University of Colorado School of Medicine											8	0											1	0																	1	0
	CONNECTICUT																																										
11	Yale University School of Medicine													4	0																					1	0					1	0
	DISTRICT OF COLUMBIA																																										
12	Georgetown University School of Medicine													3	0			5	0																	1	0					2	0
13	George Washington University Medical School													1	0			9	0	1	0																					1	0
14	Howard University School of Medicine													1	0			15	1							3	0			1	0									1	1	1	0
	GEORGIA																																										
15	Emory University School of Medicine	2	0							1	0											28	0																				
16	University of Georgia Medical Department					1	0													1	1	6	0																				
	ILLINOIS																																										
17	Chicago College of Medicine and Surgery	1	0			0	1			3	0	1	0					1	0			3	0			36	14			1	0							1	1				
18	Chicago Hospital College of Medicine											0	1													3	4															3	1
19	*Hahnemann Medical College and Hospital.—H.*					0	1																			15	0			4	0	1	0									1	0
20	Jenner Medical College																									4	5																
21	Loyola University School of Medicine			1	0					1	0	2	0													105	19	1	0	2	0			1	0	1	0						
22	*Northwestern University Medical School*	1	0			2	0					1	0													53	1			2	0	1	0										
23	Rush Medical College (University of Chicago)					1	0			1	0									1	0			1	0	100	1	1	0	2	0	1	0									3	0
24	University of Illinois College of Medicine					1	0			2	0											1	0			26	0			1	0												
	INDIANA																																										
25	Indiana University School of Medicine																									1	0	36	0											1	0		
	IOWA																																										
26	State University of Iowa College of Medicine									1	0									1	0									27	0												
27	State Univ. of Iowa Coll. of Homeo. Med.—H.					1	0																	1	0	1	1			3	0											1	0
	KANSAS																																										
28	University of Kansas School of Medicine																															14	0										
	KENTUCKY																																										
29	University of Louisville Medical Department					1	0							0	1					1	0													20	0								
	LOUISIANA																																										
30	Tulane University of Louisiana School of Med.							1	0			1	0							1	0															39	0						
	MAINE																																										
31	Bowdoin Medical School																																					16	0			2	0
	MARYLAND																																										
32	Johns Hopkins University Medical Department	1	0			1	0			1	0			2	0					1	0																			29	1	1	0
33	Univ. of Md. Sch. of Med. and Coll of P. & S.													3	2	2	1	1	1	3	0																	1	0	12	0	1	[illegible]
	MASSACHUSETTS																																										
34	Boston University School of Medicine													0	1											0	1											1	0			17	0
35	College of Physicians and Surgeons, Boston									2	0			1	0			3	0																							2	[illegible]
36	Medical School of Harvard University																																					3	1			53	0
37	Middlesex College of Medicine and Surgery									0	1			5	3			0	1																							2	[illegible]
38	Tufts College Medical School																																					0	1			[illegible]	[illegible]
	MICHIGAN																																										
39	Detroit College of Medicine and Surgery					0	1																																			1	0
40	University of Michigan Medical School					1	0																	1	0																	3	0
41	University of Michigan Homeo. Med. School—H.																																										
	MINNESOTA																																										
42	University of Minnesota Medical School					1	0																																				
	MISSOURI																																										
43	Kansas City College of Medicine and Surgery—E.							23	0			1	1																	1	0			1	0								
44	St. Louis College of Physicians and Surgeons																													1	0												
45	St. Louis University School of Medicine					1	0	1	0			2	0							1	0					3	0			1	0	1	0										
46	Washington University *Medical School*					2	0					1	0																														
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

H. = Homeopathic; E. = Eclectic; P. = *Passed*; F. = Failed.

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1			1	0																																																					13	12	1	7.7	3	1
2											0	1																																							1	0					27	23	4	14.8	6	2
3																													1	0																			1	0							25	25	0	0.0	5	3
4											1	0																	1	0																			2	0							36	32	4	11.1	7	4
5																																																	1	0							28	23	5	17.9	2	5
6											2	0																																					1	0							14	12	2	14.3	4	6
7																																																									6	6	0	0.0	1	7
8																																																									4	4	0	0.0	1	8
9																																																									22	22	0	0.0	2	9
10							2	0																																									1	0							13	13	0	0.0	5	10
11																																																									6	6	0	0.0	3	11
12																									1	0			1	0																											13	13	0	0.0	6	12
13																											1	0			1	0	1	0															1	0			2	0			18	18	0	0.0	9	13
14					1	0													1	1	4	0									1	1																	1	0									37	33	4	10.8	11	14
15																			0	2					0	1									0	1	1	0																					36	32	4	11.1	7	15
16																																			0	1																							10	8	2	20.0	4	16
17					1	0	1	0	1	0													0	2									1	0							1	0	1	0					2	0			6	1	2	0	82	63	19	23.2	19	17
18																																																							8	0	20	14	6	30.0	4	18
19							1	0																							1	0							1	0																	25	24	1	4.0	8	19
20																																																	1	0							10	5	5	50.0	2	20
21	1	0			3	0	2	0	0	1							1	0					0	1							0	1					1	0	2	0							1	0	2	0	6	0			3	0	158	136	22	14.0	21	21
22	2	0	1	0	2	0																					1	0	1	0							2	0											3	0			1	0			74	73	1	1.4	14	22
23	4	0			1	0	5	0			1	0							2	0			2	0	1	0	1	0															1	0	1	0	0	1	4	1			5	0	1	0	143	140	3	2.1	23	23
24	1	0			1	0													0	1							1	0	3	0							4	0			1	0							2	0			2	0			47	46	1	2.1	14	24
25																																																									38	38	0	0.0	3	25
26							1	0																																																	30	30	0	0.0	4	26
27																																																	1	0							9	8	1	11.1	6	27
28					4	0																																																			18	18	0	0.0	2	28
29							1	0											0	1									0	1	1	2																			2	0					31	26	5	16.1	9	29
30			9	0															1	0	1	0																			4	0															57	57	0	0.0	8	30
31	1	0																	1	0																																					20	20	0	0.0	4	31
32																			6	2	1	0	1	0	1	0			2	0	2	0											1	0			2	0									60	57	3	5.0	16	32
33	1	0													2	0			2	1	3	0							1	0	3	1			1	0			1	0			1	0			1	0	0	1	3	0					51	42	9	17.6	19	33
34	1	0											1	0					1	2	2	0																																			28	25	3	10.7	9	34
35																													1	0	1	0																									11	3	8	72.7	5	35
36	1	0					1	0					1	0											1	0					0	1	0	1															1	0			1	0			117	114	3	2.6	14	38
37																			5	2	1	0			2	0							4	0															1	0							5	3	2	40.0	2	37
38													1	0	1	0			7	5					1	0							5	1											1	0											99	85	14	14.1	12	38
39																															0	1																									25	21	4	16.0	3	39
40	1	0					1	0											1	1			1	0																													1	0			71	68	3	4.2	10	40
41																			1	1							1	0																													17	16	1	5.9	3	41
42	16	0																											1	0																			1	0							49	49	0	0.0	4	42
43																																					1	0	8	1																	25	24	1	4.0	2	43
44					17	10																																																	2	1	43	31	12	28.0	7	44
45					52	1																							1	0													2	0					1	0							59	58	1	1.7	6	45
46					13	0																																															1	0			26	26	0	0.0	10	46
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE A—PHYSICIANS EXAMINED BY

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	NEBRASKA																																												
47	John A. Creighton Medical College									2	0	1	0																																
48	Lincoln Medical College, Lincoln, Neb.—E.							2	0															1	0																				
49	University of Nebraska College of Medicine																																												
	NEW YORK																																												
50	Albany Medical College									1	0									1	0									1	0														
51	Columbia University College of Phys. and Surgs.													4	1							2	0	1	0					1	0							1	0			2	0	1	
52	Cornell University Medical College					1	0							1	0																											1	0		
53	Fordham University School of Medicine													2	0																														
54	Long Island College Hospital													1	0					0	1																					1	0		
	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.													2	0	2	0																							1	0				
	w York Med. Coll. and Hosp. for Women—H.																																												
	cuse University College of Medicine					1	1																																			1	0		
	ersity and Bellevue Hospital Med. Coll.													2	0											1	0									1	0					1	0		
	ersity of Buffalo Department of Medicine									1	0													1	0	0	1																		
	OHIO																																												
60	Eclectic Medical College—E.											0	1															1	0					5	0	0	1					1	[illegible]		
61	Ohio State University College of Medicine											1	0																																
62	Ohio State University Coll. of Homeo. Med.—H.																																									1	[illegible]		
63	University of Cincinnati College of Medicine											1	0																																
64	Western Reserve University School of Medicine																							1	0																				
	OKLAHOMA																																												
65	University of Oklahoma School of Medicine																																									1	0		
	OREGON																																												
66	University of Oregon Department of Medicine																																												
	PENNSYLVANIA																																												
67	Hahnemann Medical College and Hospital—H.													1	0	1	0							1	0	1	0													4	0	1	0		
68	Jefferson Medical College					1	0			1	0			0	1	4	0			1	0																	1	0			1	0		
69	Temple University Department of Medicine															1	0																									1	0		
70	University of Pennsylvania School of Medicine					2	0							2	0															1	0	1	0									2	0		
71	University of Pittsburgh School of Medicine																																												
72	Woman's Medical College of Pennsylvania																																									1	0		
	SOUTH CAROLINA																																												
73	Medical College of the State of South Carolina																																												
	TENNESSEE																																												
74	Meharry Medical College	1	5					5	2											0	2	4	0			5	5	1	2					10	2	1	1			1	2	1	1		
75	University of Tennessee College of Medicine							4	0															1	0	1	0																1		
76	Univ. of West Tennessee Coll. of Med. and Surg.																																												
77	Vanderbilt University Medical Department	1	1			2	0	1	0													1	0							1	0			1	0										
	TEXAS																																												
78	Baylor University College of Medicine																																												
79	University of Texas Department of Medicine																							1	0											1	0								
	VERMONT																																												
80	University of Vermont College of Medicine													2	1			1	0																			1	0			2	0		
	VIRGINIA																																												
81	Medical College of Virginia									0	1			0	1					1	0																					1	0		
82	University of Virginia Department of Medicine																																												
	WISCONSIN																																												
83	Marquette University School of Medicine																																												
	CANADA																																												
84	Laval University Faculty of Medicine																																									0	1		
85	McGill University Faculty of Medicine																																					2	0			1	0		
86	Queen's University Faculty of Medicine																									2	1																		
87	University of Manitoba, Manitoba Medical Coll.																																												
88	University of Toronto Faculty of Medicine																									1	0																		
89	Western University Faculty of Medicine																																												
90	Foreign Colleges					1	0			2	2			1	1					0	1					1	0	1	2													0	1		
91	Miscellaneous Medical Colleges	2	2			6	4	10	1	2	1	2	1	0	1			2	1	7	2	3	2	3	0	4	4	2	2	0	1	1	0	2	0	5	4			2	1	7	2		
92	Nondescript Colleges and Undergraduates									77	56	21	5											2	0																	1	0		
93	Totals by States	29		1		41		72		274		54		53		11		41		29		50		16		424		49		51		20		42		56		30		59		216		[illegible]	
94	Totals—Examined—Passed	20		1		33		68		203		44		39		10		37		21		48		16		367		43		50		20		40		50		27		54		[illegible]		[illegible]	
95	Totals—Examined—Failed	9		0		8		4		71		10		14		1		4		8		2		0		57		6		1		0		2		6		3		5		[illegible]		[illegible]	
96	Percentage of Failures	31.0		0.0		19.5		5.6		25.6		18.5		26.4		9.1		9.8		27.6		4.0		0.0		13.4		12.2		2.0		0.0		4.8		10.7		10.0		8.5		7.3		[illegible]	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

ATE BOARDS DURING 1918—Continued

23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1	0			3	0	1	0	16	0													1	0					2	0																											27	27	0	0.0	8	47
																																																								3	3	0	0.0	2	48
1	0							26	0																											1	0																	1	0	29	29	0	0.0	4	49
																		16	4																																					23	19	4	17.4	4	50
																		86	12	1	0			2	0																							1	0							115	102	13	11.3	11	51
																		28	1											1	0																									33	32	1	3.0	5	52
																		58	10											2	0																									72	62	10	13.9	3	53
																		39	2																																					44	41	3	6.8	4	54
																		35	21											0	1																					1	0			63	41	22	34.9	6	55
																		5	1																																					6	5	1	16.7	1	56
2	0																	28	1											1	0																									35	33	2	5.7	5	57
																		72	6					1	0					0	1																									85	78	7	8.2	7	58
																		28	6											3	0																	2	0							42	35	7	16.7	6	59
								1	0									0	1					15	0													1	0											1	0			1	0	29	26	3	10.3	11	60
																								23	0																													1	0	25	25	0	0.0	3	61
																								12	0																															13	13	0	0.0	2	62
																								23	0																															24	24	0	0.0	2	63
																								41	0					1	1											2	0													46	45	1	2.2	4	64
																		2	0							13	0																													16	16	0	0.0	3	65
										1	0																	11	0																			5	0							17	17	0	0.0	3	66
														1	0									1	0					13	1					1	0																			26	25	1	3.8	10	67
1	0					1	0							2	0			5	3	14	0			2	0					46	1			2	0	1	0					1	0	1	0	3	0	2	0			1	0			96	91	5	5.2	21	68
																								1	0					7	0																									10	10	0	0.0	4	69
1	0													6	0			8	4	12	0			2	0					43	3			2	0					1	0	1	0													91	84	7	7.7	14	70
																								5	0					11	0																									16	16	0	0.0	2	71
																		0	3	1	0									11	0									1	0															17	14	3	17.7	5	72
																		0	1															10	2																					13	10	3	23.1	2	73
				5	7															2	0			2	4	2	0							0	1			51	9	3	0									0	1	0	1			139	94	45	32.4	19	74
		1	0																															0	1			6	0																	14	13	1	7.2	6	75
				1	2																					1	0											6	8																	20	9	11	55.0	4	76
				1	0													1	0															0	1			23	0					1	0			1	0	0	1	1	0	1	0	39	36	3	7.7	15	77
																										1	0													13	1															15	14	1	6.7	2	78
																		1	0																					41	0															44	44	0	0.0	4	79
																		3	0									0	1			1	0											18	0											30	28	2	6.7	8	80
																		2	4	3	1									2	0			1	0											24	3			1	0					45	35	10	22.2	10	81
																																								1	0					11	0	1	0	1	0					14	14	0	0.0	4	82
																																																				8	0			8	8	0	0.0	1	83
												0	1																			0	1																							2	0	2	100.0	2	84
																		1	2																	1	0							2	0			1	0							11	8	3	27.3	7	85
																		3	3																											1	0									10	6	4	40.0	3	86
																																																1	0							1	1	0	0.0	1	87
																								1	0																							1	0							3	3	0	0.0	3	88
																																																0	1							2	1	1	50.0	2	89
														4	1			2	8					2	0					4	1									3	0							5	0			2	0			45	28	17	37.8	14	90
				38	1	3	7									1	0	5	5	4	2	1	0	2	1	2	0	9	5	13	6	1	1	1	5	1	0	4	1	13	1	0	1			6	2	7	3	1	2	2	0	2	1	249	176	73	29.4	39	91
3	0											1	1																																			6	1							174	111	63	35.8	7	92
68		12		164		27		45		6		6		17		2		573		52		9		148		24		42		190		17		29		14		122		84		11		24		56		66		20		36		24		3637					93
68		12		143		20		44		5		4		16		2		456		49		6		142		24		35		168		13		17		14		103		82		10		24		50		59		16		34		22		....	3154				94
0		0		21		7		1		1		2		1		0		117		3		3		6		0		7		22		4		12		0		19		2		1		0		6		7		4		2		2		....	....	483			95
0.0		0.0		12.8		25.9		2.2		16.7		33.3		5.9		0.0		20.4		5.8		33.3		4.1		0.0		16.7		11.6		23.5		41.4		0.0		15.6		2.4		9.1		0.0		10.7		9.2		20.0		5.6		8.3		....	....	....	13.3		96
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50						

TABLE B—GRADUATES OF 1914 TO 1918, INCLUSI

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
	ALABAMA																																											
1	University of Alabama School of Medicine	11	0																																									
	ARKANSAS																																											
2	University of Arkansas Medical Department	0	1					20	0																																	
	CALIFORNIA																																											
3	College of Medical Evangelists									21	0	1	0													1	0															1	0	
4	College of Physicians and Surgeons, Los Angeles					1	0			23	3																																	
5	College of Physicians and Surgs., San Francisco									22	5																																	
6	Hahnemann Medical College of the Pacific					1	0			8	2																																	
	Leland Stanford Junior Univ. School of Medicine									6	0																																	
	akland College of Medicine and Surgery									4	0																																	
	iversity of California Medical School									21	0																																	
	COLORADO																																											
10	University of Colorado School of Medicine											8	0																															
	CONNECTICUT																																											
11	Yale University School of Medicine													4	0																											1	0	
	DISTRICT OF COLUMBIA																																											
12	Georgetown University School of Medicine													3	0			5	0																	1	0					1	0	
13	George Washington University Medical School													1	0			9	0							3	0			1	0									4	1	1	0	
14	Howard University School of Medicine																	14	0																									
	GEORGIA																																											
15	Emory University School of Medicine	2	0							1	0											28	0																					
16	University of Georgia Medical Department																					6	0																					
	ILLINOIS																																											
17	Chicago College of Medicine and Surgery	1	0			0	1			3	0	1	0					1	0			3	0			35	13			1	0											3	1	
18	Chicago Hospital College of Medicine											0	1													3	4															1	0	
19	Hahnemann Medical College and Hospital.—H.																									15	0			4	0	1	0											
20	Jenner Medical College																									4	3																	
21	Loyola University School of Medicine									1	0	2	0													103	16	1	0	2	0			1	0									
22	Northwestern University Medical School											1	0													53	1			2	0											1	0	
23	Rush Medical College (University of Chicago)					1	0			1	0															99	1	1	0	2	0	1	0											
24	University of Illinois College of Medicine					1	0			2	0											1	0			24	0			1	0													
	INDIANA																																											
25	Indiana University School of Medicine																									1	0	36	0											1	0			
	IOWA																																											
26	State University of Iowa College of Medicine									1	0																			27	0											1	0	
27	State Univ. of Iowa Coll. of Homeo. Med.—H.																													3	0													
	KANSAS																																											
28	University of Kansas School of Medicine																															14	0											
	KENTUCKY																																											
29	University of Louisville Medical Department					1	0							0	1																			16	0									
	LOUISIANA																																											
30	Tulane University of Louisiana School of Med.							1	0											1	0															39	0							
	MAINE																																											
31	Bowdoin Medical School																																					16	0					
	MARYLAND																																											
32	Johns Hopkins University Medical Department	1	0			1	0			1	0			2	0					1	0																			20	1	3	0	
33	Univ. of Md. Sch. of Med. and Coll of P. & S.													2	2	1	1	1	1	1	0																	1	0	12	0	0	1	
	MASSACHUSETTS																																											
34	Boston University School of Medicine																																									16	[illegible]	
35	College of Physicians and Surgeons, Boston																																									1	[illegible]	
36	Medical School of Harvard University									2	0			1	0			1	0																			2	1			[illegible]	[illegible]	
37	Middlesex College of Medicine and Surgery																																									[illegible]	[illegible]	
38	Tufts College Medical School									0	1			5	3																											[illegible]	[illegible]	
	MICHIGAN																																											
89	Detroit College of Medicine and Surgery					0	1																																			2	0	
40	University of Michigan Medical School																																											
41	University of Michigan Homeo. Med. School—H.																																											
	MINNESOTA																																											
42	University of Minnesota Medical School																																											
	MISSOURI																																											
43	Kansas City College of Medicine and Surgery—E.							23	0			1	1																															
44	St. Louis College of Physicians and Surgeons																																	1	0									
45	St. Louis University School of Medicine					1	0	1	0			2	0																	1	0													
46	Washington University Medical School																									3	0			1	0	1	0											
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

EXAMINED BY STATE BOARDS DURING 1918

	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							
Marginal Number	Minnesota		Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1			1	0																																																					12	12	0	0.0	2	1
2											0	1																																							1	0					23	21	2	8.7	4	2
3																													1	0																			1	0							25	25	0	0.0	5	3
4											1	0																	1	0																			2	0							32	29	3	9.4	6	4
5																																																	1	0							28	23	5	17.9	2	5
6											2	0																																					1	0							14	12	2	14.3	4	6
7																																																									6	6	0	0.0	1	7
8																																																									4	4	0	0.0	1	8
9																																																									21	21	0	0.0	1	9
10							1	0																																									1	0							10	10	0	0.0	3	10
11																																																									5	5	0	0.0	2	11
12																									1	0			1	0																											12	12	0	0.0	6	12
13																											1	0			1	0																					2	0			14	14	0	0.0	5	13
14					1	0													1	1	4	0									1	0															1	0									33	31	2	6.1	10	14
15																			0	2															0	1	1	0																			35	32	3	8.6	6	15
16																																																									6	6	0	0.0	1	16
17					1	0	1	0	1	0													0	1									1	0							1	0	1	0					2	0			5	1	2	0	76	60	16	21.1	18	17
18																																																							8	0	20	14	6	30.0	4	18
19							1	0																															1	0																	23	23	0	0.0	6	19
20																																																	1	0							8	5	3	37.5	2	20
21	1	0			3	0	1	0	0	1							1	0																			1	0	2	0									2	9	6	0			2	0	146	129	17	11.6	16	21
22	2	0	1	0	2	0																															2	0											2	0			1	0			67	66	1	1.5	9	22
23	4	0			1	0	2	0											2	0			1	0	1	0																	1	0	1	0			2	0			5	0			127	126	1	0.8	17	23
24	1	0			1	0																															1	0											1	0			2	0			35	35	0	0.0	10	24
25																																																									38	38	0	0.0	3	25
26																																																									28	28	0	0.0	3	26
27																																																									4	4	0	0.0	2	27
28					4	0																																																			18	18	0	0.0	2	28
29																															0	1																			1	0					20	18	2	10.0	5	29
30			9	0																																					4	0															54	54	0	0.0	5	30
31	1	0																	1	0																																					18	18	0	0.0	3	31
32																			5	2	1	0	1	0	1	0			2	0	2	0											1	0			2	0									58	55	3	5.2	16	32
33															2	0			2	1	3	0									3	1			1	0			1	0			1	0							3	0					41	34	7	17.1	15	33
34	1	0											1	0					0	1	2	0																																			21	20	1	4.8	5	34
35																																																									6	1	5	83.3	1	35
36	1	0											1	0																																							1	0			109	106	3	2.8	12	36
37																																																	1	0							5	3	2	40.0	2	37
38															1	0																	0	1											1	0											91	81	10	11.0	9	38
39																																																									24	20	4	16.7	2	39
40	1	0																																																							64	62	2	3.1	4	40
41																			1																																						16	15	1	6.3	2	41
42	46	0																																															1	0							47	47	0	0.0	2	42
43																																																									25	24	1	4.0	2	43
44					16	10																															1	0	8	1															2	1	40	28	12	20.0	5	44
45					51	0																																											1	0							57	57	0	0.0	6	45
46					12	0																																					2	0									1	0			20	20	0	0.0	6	46
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1914 TO 1918, INCLUSIV

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	NEBRASKA																																												
47	John A. Creighton Medical College									2	0	1	0																																
48	Lincoln Medical College, Lincoln, Neb.—E.							2	0																																				
49	University of Nebraska College of Medicine																																												
	NEW YORK																																												
50	Albany Medical College																																												
51	Columbia University College of Phys. and Surgs.													3	1							2	0	1	0																			1	
52	Cornell University Medical College													1	0																											1	0		
53	Fordham University School of Medicine													2	0																														
54	Long Island College Hospital													1	0																														
55	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.													2	0	2	[illegible]																												
56	New York Med. Coll. and Hosp. for Women—H.																																												
57	Syracuse University College of Medicine																																									1	0		
	niversity and Bellevue Hospital Med. Coll.																									1	0									1	0					1	0		
	versity of Buffalo Department of Medicine									1	0																																		
	OHIO																																												
	ctic Medical College—E.																											1	0					5	0										
	hio State University College of Medicine											1	0																																
2	Ohio State University Coll. of Homeo. Med.—H.																																									1	0		
63	University of Cincinnati College of Medicine																																												
64	Western Reserve University School of Medicine																							1	0																				
	OKLAHOMA																																												
65	University of Oklahoma School of Medicine																																									1	0		
	OREGON																																												
66	University of Oregon Department of Medicine																																												
	PENNSYLVANIA																																												
67	Hahnemann Medical College and Hospital—H.													1	0	1	0							1	0															4	0				
68	Jefferson Medical College									1	0					4	0																					1	0						
69	Temple University Department of Medicine															1	0																												
70	University of Pennsylvania School of Medicine					1	0																																						
71	University of Pittsburgh Scho[illegible]																																												
72	Woman's Medical College of [illegible]																																												
	SOUTH CAROLINA																																												
73	Medical College of the State of South Carolina																																												
	TENNESSEE																																												
74	Meharry [illegible]	1	5					5	2											0	2	4	0			[illegible]	[illegible]																		
75	University [illegible] ge of Medicine							4	[illegible]																																				
76	Univ. of W[illegible] Coll. of Med. and Surg.																																									1	1		
77	Vanderbilt University Medical Department	1	1			1	0															1	0							1	0			1	0										
	TEXAS																																												
78	Baylor University College of Medicine																																												
79	University of Texas Department of Medicine																																			1	0								
	VERMONT																																												
80	University of Vermont College of Medicine													2	1																											1	0		
	VIRGINIA																																												
81	Medical College of Virginia									0	1			0	1																											1	0		
82	University of Virginia Department of Medicine																																												
	WISCONSIN																																												
83	Marquette University School of Medicine																																												
	CANADA																																												
84	Laval University Faculty of Medicine																																									0	1		
85	McGill University Faculty of Medicine																																					1	0			1	0		
86	Queen's University Faculty of Medicine																									1	0																		
87	University of Manitoba, Manitoba Medical Coll.																																												
88	University of Toronto Faculty of Medicine																																												
89	Western University Faculty of Medicine																																											1	0
90	Foreign Colleges									1	1															1	0																		
91	Miscellaneous Medical Colleges	2	0			1	0	1	0	2	1	1	0									1	0																			0	1		
92	Nondescript Colleges and Undergraduates																																												
93	Totals by States	26		0		12		59		138		21		43		10		32		5		46		3		392		42		47		18		36		43		22		56		209		[illegible]	
94	Totals—Examined—Passed	19		0		10		57		124		19		34		9		31		3		46		3		351		40		47		18		34		43		21		52		194		[illegible]	
95	Totals—Examined—Failed	7		0		2		2		14		2		9		1		1		2		0		0		41		2		0		0		2		0		1		4		15		[illegible]	
96	Percentage of Failures	26.9		0.0		16.7		3.4		10.1		9.5		21.0		10.0		3.1		40.0		0.0		0.0		10.4		4.8		0.0		0.0		5.6		0.0		4.5		7.1		7.2		[illegible]	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

XAMINED BY STATE BOARDS DURING 1918—Continued

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
47	1	0			3	0	1	0	16	0																			2	0																											26	26	0	0.0	7	47
48																																																									2	2	0	0.0	1	48
49	1	0							26	0																											1	0																					28	28	0	0.0	3	49
50																			16	4																																					20	16	4	20.0	1	50
51																			86	12	1	0			1	0																							1	0							109	96	13	11.9	8	51
52																			28	1											1	0																									32	31	1	3.1	4	52
53																			57	9											2	0																									70	61	9	12.9	3	53
54																			39	[illegible]																																					42	40	2	4.8	2	54
55																			35	[illegible]																																	1	0			61	41	20	32.8	6	55
56																			5																																						6	5	1	10.7	1	56
57	2	0																	27	1											1	0																									32	31	1	3.1	4	57
58																			72	6					1	0																															84	78	6	7.1	6	58
59																			28	6											1	0																	1	0							37	31	6	16.2	4	59
60									1	0									0	1					15	0													1	0											1	0					25	24	1	4.0	7	60
61																									23	0																													1	0	25	25	0	0.0	3	61
62																									12	0																															13	13	0	0.0	2	62
63																									23	0																															23	23	0	0.0	1	63
64																									41	0					1	0											2	0													45	45	0	0.0	4	64
65																			2	0							13	0																													16	16	0	0.0	3	65
66																													11	0																					2	0							13	13	0	0.0	2	66
67															1	0															13	1																									22	21	1	4.5	6	67
68	1	0					1	0							2	0			3	1	14	0			2	0					45	1			2	0	1	0					1	0	1	0	3	0	1	0			1	0			86	84	2	2.3	17	68
69																									1	0					7	0																									10	10	0	0.0	4	69
70	1	0													6	0			5	3	12	0			2	0					43	3			2	0					1	0	1	0													85	79	6	7.1	14	70
71																									5	0					11	0																									16	16	0	0.0	2	71
72																			0	2	1	0									11	0																									14	12	2	14.3	3	72
73																																			10	0																					10	10	0	0.0	1	73
74					5	7															2	0			2	4	2	0											50	9	3	0									0	1	0	1			133	92	41	30.8	18	74
75			1	0																																			6	0																	11	11	0	0.0	3	75
76					1	2																					1	0											5	7																	18	8	10	55.6	4	76
77					1	0													1	0															0	1			23	0					1	0			1	0			1	0			35	33	2	5.7	12	77
78																											1	0													13	1															15	14	1	6.7	2	78
79																			1	0																					41	0															43	43	0	0.0	3	79
80																			3	0													1	0											18	0											26	25	1	3.8	5	80
81																			1	4	2	1									1	0			1	0											24	3			1	0					41	31	10	24.4	9	81
82																																									1	0					11	0			1	0					13	13	0	0.0	3	82
83																																																					8	0			8	8	0	0.0	1	83
84																																																									1	0	1	100.0	1	84
85													0	1																							1	0																			6	4	2	33.3	5	85
86																																																									6	3	3	50.0	2	86
87																																																	1	0							1	1	0	0.0	1	87
88																																																									0	0	0	0.0	0	88
89																																																									1	1	0	0.0	1	89
90																			[illegible]	1																					1	0							1	0			1	0			7	5	2	28.6	6	90
91					31	1	1	0											1	1	0	1							0	2	11	2			0	1			3	0	12	1	0	1			1	0							1	0	81	69	12	14.8		91
92																																																														92
93	64		12		153		9		45		4		3		12		1		527		45		3		138		18		20		165		12		19		9		118		79		11		22		45		27		15		31		17		2934					93
94	64		12		133		9		44		3		2		12		1		435		43		2		134		18		18		155		11		16		9		100		77		10		22		42		27		14		29		16		....	2710				94
95	0		0		20		0		1		1		1		0		0		92		2		1		4		0		2		10		1		3		0		18		2		1		0		3		0		1		2		1		....	....	274			95
96	0.0		0.0		13.1		0.0		2.2		25.0		33.3		0.0		0.0		17.4		4.4		33.3		2.9		0.0		10.0		6.1		8.3		15.8		0.0		15.3		2.5		9.1		0.0		6.7		0.0		6.7		6.5		5.9		....	....	....	9.2		96
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE C—GRADUATES EXAMINE

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1914-1918					Graduates of 1913 and Previous					Graduates of 1918				
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States
	ALABAMA																				
1	University of Alabama School of Medicine	13	12	1	7.7	3	12	12	0	0.0	2	1	0	1	100.0	1	9	9	0	0.0	[illegible]
	ARKANSAS																				
2	University of Arkansas Medical Department	27	23	4	14.8	6	23	21	2	8.7	4	4	2	2	50.0	3	22	21	1	4.5	3
	CALIFORNIA																				
3	College of [illegible]	25	25	0	0.0	5	25	25	0	0.0	5	0	0	0	0.0	0	23	23	0	0.0	3
4	College of [illegible]	36	32	4	11.1	7	32	29	3	9.4	6	4	3	1	25.0	2	28	25	3	10.7	[illegible]
5	College of [illegible]geons, Los Angeles	28	23	5	17.9	2	28	23	5	17.9	2	0	0	0	0.0	0	25	20	5	20.0	[illegible]
6	College of [illegible]gs., San Francisco	14	12	2	14.3	4	14	12	2	14.3	4	0	0	0	0.0	0	12	10	2	16.7	[illegible]
7	Hahnemann Medical College of the Pacific	6	6	0	0.0	1	6	6	0	0.0	1	0	0	0	0.0	0	3	3	0	0.0	1
8	Leland Stanford Junior Univ. School of Medicine	4	4	0	0.0	1	4	4	0	0.0	1	0	0	0	0.0	0	4	4	0	0.0	1
9	Oakland College of Medicine and Surgery University of California Medical School	22	22	0	0.0	2	21	21	0	0.0	1	1	1	0	0.0	1	21	21	0	0.0	1
	COLORADO																				
	iversity of Colorado School of Medicine	13	13	0	0.0	5	10	10	0	0.0	3	3	3	0	0.0	3	8	8	0	0.0	2
	CONNECTICUT																				
	e University School of Medicine	6	6	0	0.0	3	5	5	0	0.0	2	1	1	0	0.0	1	5	5	0	0.0	2
	DISTRICT OF COLUMBIA																				
12	C[illegible] School of Medicine	13	13	0	0.0	6	12	12	0	0.0	6	1	1	0	0.0	1	9	0	0	0.0	4
13	[illegible] University Medical School	18	18	0	0.0	9	14	14	0	0.0	5	4	4	0	0.0	4	6	6	0	0.0	1
14	[illegible] School of Medicine	37	33	4	10.8	11	33	31	2	6.1	10	4	2	2	50.0	3	18	17	1	5.6	3
	GEORGIA																				
15	Emory University School of Medicine	36	32	4	11.1	7	35	32	3	8.6	6	1	0	1	100.0	1	29	28	1	3.4	3
16	University of Georgia Medical Department	10	8	2	20.0	4	6	6	0	0.0	1	4	2	2	50.0	3	6	6	0	0.0	1
	ILLINOIS																				
17	[illegible]e and Surgery	82	63	19	23.2	19	76	60	16	21.1	18	6	3	3	50.0	4	0	0	0	0.0	0
18	[illegible]f Medicine	20	14	6	30.0	4	20	14	6	30,0	4	0	0	0	0.0	0	13	11	2	15.4	3
19	[illegible]e and Hospital.—H.	25	24	1	4.0	8	23	23	0	0.0	6	2	1	1	50.0	2	20	20	0	0.0	4
20	[illegible]	10	5	5	50.0	2	8	5	3	37.5	2	2	0	2	100.0	1	0	0	0	0.0	0
21	[illegible]f Medicine	158	136	22	14.0	21	146	129	17	11.6	16	12	7	5	41.7	8	104	96	8	7.7	9
22	N[illegible] Medical School	74	73	1	1.4	14	67	66	1	1.5	9	7	7	0	0.0	6	63	62	1	1.6	8
23	Rush Medical College (University of Chicago)	143	140	3	2.1	23	127	126	1	0.8	17	16	14	2	12.5	11	99	98	1	1.0	7
24	University of Illinois College of Medicine	47	46	1	2.1	14	35	35	0	0.0	10	12	11	1	8.3	7	26	26	0	0.0	3
	INDIANA																				
25	Indiana University School of Medicine	38	38	0	0.0	3	38	38	0	0.0	3	0	0	0	0.0	0	35	35	0	0.0	1
	IOWA																				
26	State University of Iowa College of Medicine	30	30	0	0.0	4	28	28	0	0.0	3	2	2	0	0.0	2	27	27	0	0.0	1
27	State Univ. of Iowa Coll. of Homeo. Med.—H.	9	8	1	11.1	6	4	4	0	0.0	2	5	4	1	20.0	4	4	4	0	0.0	2
	KANSAS																				
28	University of Kansas School of Medicine	18	18	0	0.0	2	18	18	0	0.0	2	0	0	0	0.0	0	17	17	0	0.0	2
	KENTUCKY																				
29	University of Louisville Medical Department	31	26	5	16.1	9	20	18	2	10.0	5	11	8	3	27.3	7	14	14	0	0.0	2
	LOUISIANA																				
30	Tulane University of Louisiana School of Med.	57	57	0	0.0	8	54	54	0	0.0	5	3	3	0	0.0	3	50	50	0	0.0	4
	MAINE																				
31	Bowdoin Medical School	20	20	0	0.0	4	18	18	0	0.0	3	2	2	0	0.0	1	16	16	0	0.0	1
	MARYLAND																				
32	Johns Hopkins University Medical Department	60	57	3	5.0	16	58	55	3	5.2	16	2	2	0	0.0	2	33	32	1	3.0	10
33	Univ. of Md. Sch. of Med. and Coll of P. & S.	51	42	9	17.6	19	41	34	7	17.1	15	10	8	2	20.0	8	16	16	0	0.0	6
	MASSACHUSETTS																				
34	Boston University School of Medicine	28	25	3	10.7	9	21	20	1	4.8	5	7	5	2	28.6	6	16	16	0	0.0	2
35	College of Physicians and Surgeons, Boston	11	3	8	72.7	5	6	1	5	83.3	1	5	2	3	60.0	5	0	0	0	0.0	0
36	Medical School of Harvard University	117	114	3	2.6	14	109	106	3	2.8	12	8	8	0	0.0	5	91	90	1	1.1	[illegible]
37	Middlesex College of Medicine and Surgery	5	3	2	40.0	2	5	3	2	40.0	2	0	0	0	0.0	0	4	2	2	50.0	1
38	Tufts College Medical School	99	85	14	14.1	12	91	81	10	11.0	9	8	4	4	50.0	4	75	66	9	12.0	7
	MICHIGAN																				
39	Detroit College of Medicine and Surgery	25	21	4	16.0	3	24	20	4	16.7	2	1	1	0	0.0	1	23	20	3	13.0	1
40	University of Michigan Medical School	71	68	3	4.2	10	64	62	2	3.1	4	7	6	1	14.3	7	62	60	2	3.2	4
41	University of Michigan Homeo. Med. School—H.	17	16	1	5.9	3	16	15	1	6.3	2	1	1	0	0.0	1	14	11	0	0.0	1
	MINNESOTA																				
42	University of Minnesota Medical School	49	49	0	0.0	4	47	47	0	0.0	2	2	2	0	0.0	2	45	45	0	0.0	1
	MISSOURI																				
43	Kansas City College of Medicine and Surgery—E.	25	24	1	4.8	2	25	24	1	4.0	2	0	0	0	0.0	0	23	23	0	0.0	[illegible]
44	St. Louis College of Physicians and Surgeons	43	31	12	28.0	7	40	28	12	30.0	5	3	3	0	0.0	3	33	22	11	33.3	[illegible]
45	St. Louis University School of Medicine	59	58	1	1.7	6	57	57	0	0.0	6	2	1	1	50.0	1	55	55	0	0.0	[illegible]
46	Washington University Medical School	26	26	0	0.0	10	20	20	0	0.0	6	6	6	0	0.0	5	15	15	0	0.0	[illegible]

H. = Homeopathic; E. = Eclectic.

NAME OF COLLEGE	Graduates of All Years					Graduates of 1914-1918					Graduates of 1913 and Previous					Graduates of 1918					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
NEBRASKA																					
John A. Creighton Medical College	27	27	0	0.0	8	26	26	0	0.0	7	1	1	0	0.0	1	17	17	0	0.0	2	47
Lincoln Medical College, Lincoln, Neb.—E.	3	3	0	0.0	2	2	2	0	0.0	1	1	1	0	0.0	1	2	2	0	0.0	1	48
University of Nebraska College of Medicine	29	29	0	0.0	4	28	28	0	0.0	3	1	1	0	0.0	1	26	26	0	0.0	1	49
NEW YORK																					
Albany Medical College	23	19	4	17.4	4	20	16	4	20.0	1	3	3	0	0.0	3	8	8	0	0.0	1	50
Columbia University College of Phys. and Surgs.	115	102	13	11.3	11	109	96	13	11.9	8	6	6	0	0.0	5	83	74	9	10.8	5	51
Cornell University Medical College	33	32	1	3.0	5	32	31	1	3.1	4	1	1	0	0.0	1	21	20	1	4.8	2	52
Fordham University School of Medicine	72	62	10	13.9	3	70	61	9	12.9	3	2	1	1	50.0	1	54	51	3	5.6	2	53
Long Island College Hospital	44	41	3	6.8	4	42	40	2	4.8	2	2	1	1	50.0	2	33	31	2	6.1	2	54
N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	63	41	22	34.9	6	61	41	20	32.8	6	2	0	2	100.0	1	39	29	10	25.7	5	55
New York Med. Coll. and Hosp. for Women—H.	6	5	1	16.7	1	6	5	1	16.7	1	0	0	0	0.0	0	4	4	0	0.0	1	56
Syracuse University College of Medicine	35	33	2	5.7	5	32	31	1	3.1	4	3	2	1	33.3	2	24	24	0	0.0	2	57
University and Bellevue Hospital Med. Coll.	85	78	7	8.2	7	84	78	6	7.1	6	1	0	1	100.0	1	75	70	5	6.7	4	58
University of Buffalo Department of Medicine	42	35	7	16.7	6	37	31	6	16.2	4	5	4	1	20.0	4	25	22	3	12.0	1	59
OHIO																					
Eclectic Medical College—E.	29	26	3	10.3	11	25	24	1	4.0	7	4	2	2	50.0	4	23	23	0	0.0	6	60
Ohio State University College of Medicine	25	25	0	0.0	3	25	25	0	0.0	3	0	0	0	0.0	0	23	23	0	0.0	1	61
Ohio State University Coll. of Homeo. Med.—H.	13	13	0	0.0	2	13	13	0	0.0	2	0	0	0	0.0	0	13	13	0	0.0	2	62
University of Cincinnati College of Medicine	24	24	0	0.0	2	23	23	0	0.0	1	1	1	0	0.0	1	23	23	0	0.0	1	63
Western Reserve University School of Medicine	46	45	1	2.2	4	45	45	0	0.0	4	1	0	1	100.0	1	43	43	0	0.0	3	64
OKLAHOMA																					
University of Oklahoma School of Medicine	16	16	0	0.0	3	16	16	0	0.0	3	0	0	0	0.0	0	13	13	0	0.0	1	65
OREGON																					
University of Oregon Department of Medicine	17	17	0	0.0	3	13	13	0	0.0	2	4	4	0	0.0	2	7	7	0	0.0	2	66
PENNSYLVANIA																					
Hahnemann Medical College and Hospital—H.	26	25	1	3.8	10	22	21	1	4.5	6	4	4	0	0.0	2	5	5	0	0.0	3	67
Jefferson Medical College	96	91	5	5.2	21	86	84	2	2.3	17	10	7	3	30.0	7	30	29	1	3.3	11	68
Temple University Department of Medicine	10	10	0	0.0	4	10	10	0	0.0	4	0	0	0	0.0	0	2	2	0	0.0	2	69
University of Pennsylvania School of Medicine	91	84	7	7.7	14	85	79	6	7.1	14	6	5	1	16.7	3	23	22	1	4.4	8	70
University of Pittsburgh School of Medicine	16	16	0	0.0	2	16	16	0	0.0	2	0	0	0	0.0	0	3	3	0	0.0	1	71
Woman's Medical College of Pennsylvania	17	14	3	17.7	5	14	12	2	14.3	3	3	2	1	33.3	3	2	1	1	50.0	2	72
SOUTH CAROLINA																					
Medical College of the State of South Carolina	13	10	3	23.1	2	10	10	0	0.0	1	3	0	3	100.0	2	10	10	0	0.0	1	73
TENNESSEE																					
Meharry Medical College	139	94	45	32.4	19	133	92	41	30.8	18	6	2	4	66.7	4	86	70	16	18.6	11	74
University of Tennessee College of Medicine	14	13	1	7.2	6	11	11	0	0.0	3	3	2	1	33.3	3	10	10	0	0.0	3	75
Univ. of West Tennessee Coll. of Med. and Surg.	20	9	11	55.0	4	18	8	10	55.6	4	2	1	1	50.0	1	6	3	3	50.0	1	76
Vanderbilt University Medical Department	39	36	3	7.7	15	35	33	2	5.7	12	4	3	1	25.0	4	22	22	0	0.0	1	77
TEXAS																					
Baylor University College of Medicine	15	14	1	6.7	2	15	14	1	6.7	2	0	0	0	0.0	0	13	13	0	0.0	1	78
University of Texas Department of Medicine	44	44	0	0.0	4	43	43	0	0.0	3	1	1	0	0.0	1	40	40	0	0.0	2	79
VERMONT																					
University of Vermont College of Medicine	30	28	2	6.7	8	26	25	1	3.8	5	4	3	1	25.0	4	19	19	0	0.0	4	80
VIRGINIA																					
Medical College of Virginia	45	35	10	22.2	10	41	31	10	24.4	9	4	4	0	0.0	4	28	26	2	7.1	4	81
University of Virginia Department of Medicine	14	14	0	0.0	4	13	13	0	0.0	3	1	1	0	0.0	1	12	12	0	0.0	2	82
WISCONSIN																					
Marquette University School of Medicine	8	8	0	0.0	1	8	8	0	0.0	1	0	0	0	0.0	0	7	7	0	0.0	1	83
CANADA																					
Laval University Faculty of Medicine	2	0	2	100.0	2	1	0	1	100.0	1	1	0	1	100.0	1	0	0	0	0.0	0	84
McGill University Faculty of Medicine	11	8	3	27.3	7	6	4	2	33.3	5	5	4	1	20.0	4	3	2	1	33.3	3	85
Queen's University Faculty of Medicine	10	6	4	40.0	3	6	3	3	50.0	2	4	3	1	25.0	3	0	0	0	0.0	0	86
University of Manitoba, Manitoba Medical Coll.	1	1	0	0.0	1	1	1	0	0.0	1	0	0	0	0.0	0	0	0	0	0.0	0	87
University of Toronto Faculty of Medicine	3	3	0	0.0	3	0	0	0	0.0	0	3	3	0	0.0	3	0	0	0	0.0	0	88
Western University Faculty of Medicine	2	1	1	50.0	2	1	1	0	0.0	1	1	0	1	100.0	1	0	0	0	0.0	0	89
Foreign Colleges	45	28	17	37.8	14	7	5	2	28.6	6	38	23	15	39.5	13	1	1	0	0.0	1	90
Miscellaneous Medical Colleges	249	176	73	29.4	39	81	69	12	14.8	19	168	107	61	36.3	37	47	43	4	8.5	5	91
Nondescript Colleges and Undergraduates	174	111	63	35.8	7	....	....	....	....	..	...	...	...	....	..	....	....	...	....	..	92
Totals by States	3637	3154	483	13.3		2984	2710	274	9.2		479	333	146	30.5		2149	2033	116	5.4		93

TABLE D.—NONRECOGNITION OF MEDICAL COLLEGES

This Table, Based on Official Reports, Shows the Numerous Pitfalls to Be Avoided by Prospective Medical Students

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

Marginal Number	COLLEGE	Classification by Council on Medical Education †	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Reported Non-Recognition by State Licensing Boards			Marginal Number
			Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	
1	University of Alabama School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	1
2	University of Arkansas Medical Department	B	x	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	x	..	..	x	x	x	..	..	..	..	..	x	..	..	..	..	39	11	78	2
3	College of Physicians and Surgeons, San Francisco	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	..	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	13	37	26	3
4	Leland Stanford Junior Univ. School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	4
5	University of California Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	5
6	College of Physicians and Surgeons, Los Angeles	B	x	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	x	..	..	x	..	..	..	x	..	x	..	..	..	x	x	..	..	..	..	..	x	..	..	..	..	39	11	78	6
7	Oakland College of Medicine and Surgery	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	..	x	x	x	x	..	x	x	x	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	14	36	28	7
8	College of Medical Evangelists	B	x	..	..	..	..	..	..	x	..	x	..	..	x	..	..	..	x	x	..	..	..	..	..	..	..	x	..	..	x	x	x	x	x	..	x	..	..	x	x	x	..	..	..	..	..	x	x	..	..	..	32	18	64	8
9	University of Colorado School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	9
10	Yale University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	10
11	George Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	11
12	Georgetown University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	12
13	Howard University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	13
14	Emory University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	14
15	University of Georgia Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	15
16	Loyola University Medical Department	B	x	..	..	..	..	x	..	x	..	x	..	..	..	..	..	..	x	..	..	..	..	x	..	..	..	x	..	..	x	x	..	x	x	..	x	..	..	x	x	x	..	..	..	..	..	x	..	..	x	..	33	17	66	16
17	Chicago Hospital College of Medicine	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	..	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	12	38	24	17
18	Hahnemann Medical College and Hospital, Chicago	B	x	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	..	..	x	x	..	..	..	..	..	x	..	..	..	..	42	8	84	18
19	Jenner Medical College, Chicago	C[1]	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	..	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	x	x	x	..	11	39	22	19
20	Northwestern University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	20
21	Rush Medical College (University of Chicago)	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	21
22	University of Illinois College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	22
23	Indiana University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	23
24	State University of Iowa College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	24
25	State University of Iowa College of Homeo. Med.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	25
26	University of Kansas School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	26
27	University of Louisville Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	27
28	Tulane University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	28
29	Bowdoin Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	29
30	Johns Hopkins University Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	30
31	Univ. of Md. School of Med. and Coll. of P. & S.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	31
32	Boston University School of Medicine.—H.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	32
33	College of Physicians and Surgeons, Boston	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	..	x	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	12	38	24	33
34	Medical School of Harvard University	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	34
35	Middlesex College of Medicine and Surgery	C	x	..	..	x	..	x	x	x	..	x	x	..	x	..	x	..	x	..	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	14	36	28	35
36	Tufts College Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	36
37	Detroit College of Medicine and Surgery	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	37
38	University of Michigan Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	38
39	University of Michigan Homeopathic Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	39
40	University of Minnesota Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	40
41	University of Mississippi Department of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	41
42	Kansas City University of Physicians and Surgeons[2]	C	x	..	..	x	..	x	x	x	..	x	x	..	..	..	x	..	..	..	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	..	x	x	..	x	x	..	16	34	32	42
43	Eclectic Medical University, Kansas City	C	x	..	..	..	..	x	..	x	..	..	x	..	x	..	x	..	..	x	x	x	..	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	..	x	x	x	x	..	x	..	x	x	x	x	x	..	17	33	34	43

44	Kansas City College of *Medicine and Surg.* (Eclectic)	3	x					x		x			x		x		x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x		x		x	x		x	x		17	33	34	44
45	St. Louis *College of* Physicians and Surgeons	C	x			x		x	x	x		x	x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x		x	x		12	38	24	45
46	University *of* Missouri School of Medicine*	A																																						x													50	....	100	46
47	St. Louis University *School of Medicine*	A																																																			50	....	100	47
48	Washington University Medical School	A																																																			50	....	100	48
49	John A. Creighton Medical *College*	A																																																			50	....	100	49
50	University of Nebraska College of Medicine	A																														x		x																			48	2	96	50
51	*Lincoln Medical* College (Eclectic), Lincoln Neb.	C	x					x		x			x		x		x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x		x		x	x		x	x		17	33	34	51
52	Dartmouth Medical School*	A																																																			50	....	100	52
53	Albany Medical College	A																																						x													49	1	98	53
54	Columbia University College *of Phys. and Surgs.*	A																																																			50	....	100	54
55	Cornell University Medical College	A																																																			50	....	100	55
56	*Fordham* University School of Medicine	A																																																			50	....	100	56
57	*Long Island* College Hospital	A																																																			50	....	100	57
58	New York Homeopathic Med. Coll. and Flower Hosp.	B	x																									x			x				x						x	x						x					43	7	86	58
59	University and *Bellevue Hospital Medical College*	A																																																			50	....	100	59
60	Syracuse University College of Medicine	A																																																			50	....	100	60
61	University of *Buffalo Medical Department*	A																																																			50	....	100	61
62	University of North Carolina School of Medicine*	A																																																			30	....	100	62
63	Wake Forest College School of Medicine*	A																																																			50	....	100	63
64	University of *North* Dakota School of Medicine*	A																																						x													49	1	98	64
65	Western Reserve University School of Medicine	A																																																			50	....	100	65
66	Eclectic *Medical College*	B	x							x																		x			x				x						x	x						x					42	8	84	66
67	Medical College of the University of Cincinnati	A																																																			50	....	100	67
68	Ohio State University College of *Medicine*	A																																																			50	....	100	68
69	Ohio State University College of Homeopathic Med.	B	x							x		x																x			x				x						x	x						x					41	9	82	69
70	University of Oklahoma School of Medicine	B	x							x		x																x			x				x						x	x						x					41	9	93	70
71	University of Oregon *Medical Department*	A																																																			50	....	100	71
72	Hahnemann Medical Coll. and Hosp., Philadelphia	A																																																			50	....	100	72
73	*Jefferson* Medical College	A																																																			50	....	100	73
74	*Temple* University Medical Department	B	x									x			x													x			x	x		x	x						x	x						x					39	11	78	74
75	University of Pennsylvania School of Medicine	A																																																			50	....	100	75
76	Woman's Medical College of *Pennsylvania*	A																																																			50	....	100	76
77	University of Pittsburgh School of Medicine	A																																																			50	....	100	77
78	*Medical College of the State of South Carolina*	A																																																			50	....	100	78
79	University of South Dakota College of Medicine*	A																														x		x						x													47	3	94	79
80	Meharry Medical College	B	x							x		x												x				x			x	x		x	x					x	x	x						x					37	13	74	80
81	Vanderbilt University Medical Department	A																																																			50	....	100	81
82	University of Tennessee College of Medicine	A																x														x		x																			47	3	94	82
83	University of West *Tennessee Medical* Department	C	x			x		x	x	x		x	x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x		11	39	22	83
84	University of Texas Department of Medicine	A																														x		x																			48	2	96	84
85	Baylor University College of Medicine	A																																																			50	....	100	85
86	Fort Worth School of Medicine	B	x							x		x												x				x			x	x		x	x		x			x	x	x						x					36	14	72,	86
87	University of Utah School of Medicine*	A																																						x													49	1	98	87
88	University of Vermont College of Medicine	A																																																			50	....	100	88
89	Medical College of Virginia	A																																																			50	....	100	89
90	University of Virginia Department of Medicine	A																																																				50	....	100	90
91	West Virginia University School of Medicine*	A																																						x													49	1	98	91
92	Marquette University School of Medicine	A																														x		x						x													47	3	94	92
93	University of Wisconsin *Medical School**	A																																						x													49	1	98	93
	Number of Medical Colleges reported not recognized	......	24	..	..	9	..	13	9	22	..	18	12	..	13	5	12	..	12	11	12	12	..	16	12	12	12	24	12	..	24	22	12	22	24	12	16	12	10	27	24	24	12	1	12	..	12	24	3	12	13	..				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* *Nine medical colleges give only the first two years of the medical course.*

1. Rated in Class C when last inspected—1912. Has united with the Chicago Hospital College of *Medicine.* Both are reported as not recognized by the Illinois Department of Registration and Education.

2. Formerly the Central College of *Osteopathy;* in 1917 became the Central College Medical Department; present title in 1918.

† Classification revised to March 15, 1919.

3. This college is an offshoot of the *Eclectic* Medical University, an institution rated in Class C. *It is* reported as not recognized by the Missouri State Board of Health.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to *admit* to their examinations graduates of, the colleges marked by this letter—x.

STATE BOARD STATISTICS FOR 1918

CONCLUDED FROM PAGE 1137

may show their skill in diagnosis and treatment, or for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as state licensing boards extend the provision for reciprocity, or for the endorsement, without further examination, of licenses granted by other states where a physician's qualifications are otherwise satisfactory. As a rule, the states which do not have reciprocal relations with other states (Florida, Massachusetts, Montana, Oregon and Washington, see Table H) examined the largest numbers of old practitioners.

TABLE E.—GRADUATES OF COLLEGES OF EACH STATE
Showing the Number Examined and Percentage of Failures

All Colleges of	Graduates								State Rank	
	Of All Years		Of 1914 to 1918		Of 1918 & Prev.		Of 1918			
	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	According to the No. Examined	According to Successes at Examinations
Alabama	13	7.7	12	0.0	1	0.0	9	0.0	25	8
Arkansas	27	14.8	23	8.7	4	50.0	22	4.5	20	16
California	135	8.1	130	7.6	5	20.0	116	8.6	8	9
Colorado	13	0.0	10	0.0	3	0.0	8	0.0	25	1
Connecticut	6	0.0	5	0.0	1	0.0	5	0.0	27	1
Dist. of Columbia	68	5.9	59	3.4	9	22.2	33	3.0	11	4
Georgia	46	13.0	41	7.3	5	60.0	35	2.9	15	14
Illinois	559	10.3	502	8.8	57	24.6	325	3.7	1	11
Indiana	38	0.0	38	0.0	0	0.0	35	0.0	17	1
Iowa	39	2.6	32	0.0	7	14.3	31	0.0	16	2
Kansas	18	0.0	18	0.0	0	0.0	17	0.0	22	1
Kentucky	31	16.1	20	10.0	11	17.7	14	0.0	18	17
Louisiana	57	0.0	54	0.0	3	0.0	50	0.0	13	1
Maine	20	0.0	18	0.0	2	0.0	16	0.0	21	1
Maryland	111	10.8	99	10.1	12	16.7	49	2.0	10	12
Massachusetts	260	11.5	232	9.0	28	32.1	186	6.5	3	13
Michigan	113	7.1	104	6.7	9	11.1	99	5.1	9	7
Minnesota	49	0.0	47	0.0	2	0.0	45	0.0	14	1
Missouri	153	9.2	142	9.2	11	9.1	129	8.5	6	10
Nebraska	59	0.0	56	0.0	3	0.0	45	0.0	12	1
New York	518	13.5	493	12.7	25	28.0	366	9.0	2	15
Ohio	137	2.9	131	0.8	6	50.0	125	0.0	7	3
Oklahoma	16	0.0	16	0.0	0	0.0	13	0.0	24	1
Oregon	17	0.0	13	0.0	4	0.0	7	0.0	23	1
Pennsylvania	256	6.2	233	4.7	23	21.8	65	4.6	4	5
South Carolina	13	23.1	10	0.0	3	100.0	10	0.0	25	19
Tennessee	212	28.3	197	26.9	15	46.7	124	15.3	5	20
Texas	59	1.7	58	1.7	1	0.0	53	0.0	12	2
Vermont	30	6.7	26	3.8	4	25.0	19	0.0	19	6
Virginia	59	17.0	54	18.5	5	0.0	40	5.0	12	18
Wisconsin	8	0.0	8	0.0	0	0.0	7	0.0	26	1
Total Ex. in 1918	3140	10.2	2881	8.8	259	25.4	2098	5.3		

This table gives data relating to the medical colleges in each state. For example, it shows that, of all the medical schools in Massachusetts, 260 graduates of various years were examined by state boards during 1918, and of this number, 11.5 per cent. failed. Of the 232 who graduated in recent years (1914 to 1918 inclusive), 11.7 per cent. failed; of the 28 who graduated previous to 1918, 9.0 per cent. failed, and of the 186 graduates of 1918, 6.5 per cent. failed.

The ninth column gives the rank of each state group of colleges according to the number of graduates examined. The Illinois group of colleges leads, having 559 graduates examined by state boards during 1918, followed by New York with 518, Massachusetts with 260, Pennsylvania with 256 and Tennessee with 212.

The last column gives the rank of each state group of colleges according to the success of the graduates at the examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined it ranks eleventh in the success of its graduates at the examinations. While Tennessee ranks fifth as to the number examined, it ranks as the twentieth (the lowest place) in the success of its graduates at the examinations.

Graduates of 1918 Examined During 1918

Table C also gives the results for the graduates of 1918 who were examined during the year by the state boards, and shows that 2,149, or 59.1 per cent., of all candidates examined during the year graduated in 1918, including three who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 2,807 students last year (including 137 for whom diplomas were withheld until a year's internship in a hospital has been completed); therefore, 76.6 per cent. of all graduates in 1918 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which doubtless accounts for some of the remaining 23.4 per cent. Others probably enlisted as medical officers of the United States Army or Navy without first obtaining licenses. Of the 1918 graduates examined, 116, or 5.4 per cent., failed, as compared with 5.7 per cent. in 1917; 7.4 per cent. in 1916; 7.5 per cent. in 1915, and 12.7 per cent. in 1914. A steady improvement in recent years in the qualifications of medical graduates is apparent from these figures.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "not in good standing"; some give them as "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group 1 having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education.

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards	57
Not recognized by 1 to 3 state boards	12
Not recognized by 7 to 18 state boards	12
Not recognized by 33 to 39 state boards	12
Total	93

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 57 medical colleges now having complete recognition in all states. There are 12 others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining 24 colleges, he will find on graduation that his diploma is not recognized in from 8 to 39 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—*they would be actually misleading.* For example, 25 graduates of the Kansas City (Mo.) College of Medicine and Surgery were examined in 1918. Of these, 23 (92 per cent.) were examined by the Arkansas Board of *Eclectic* Medical Examiners, all of whom passed, while 2 were examined by the Eclectic Board of Connecticut, of whom 1 candidate failed. The statistics show only 4 per cent. of failures, which would make this college appear to belong among the better grade medical schools of the country. Quite different the picture, however, when the facts are known, as set forth in Table D, that this college is reported as not recognized *in its home state* and in 33 other states, and that for its very existence it depends on the acceptance of its graduates by the Eclectic boards of Arkansas and Connecticut! The figures obtained for the last several years indicate that neither the Kansas City College

TABLE 2.—SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Graduates of	1917		1918	
	Number	Per Cent.	Number	Per Cent.
Class A medical colleges	2,827	69.6	2,109	66.9
Class B medical colleges	813	20.0	541	17.2
Class C medical colleges	255[1]	6.3	288[2]	9.1
Miscellaneous medical colleges	124	3.1	185	5.9
Foreign medical colleges	42	1.0	28	0.9
Totals	4,061	100.0	3,154	100.0

1. Of this number 73 were graduates of osteopathic colleges licensed in California as "physicians and surgeons."
2. Of this number 98 were osteopaths, including 77 registered in California and 21 in Colorado.

of Medicine and Surgery nor the Arkansas Eclectic Board could exist without the other.

During the six years this table has been published, the percentages of fully recognized colleges were, respectively, 29.0, 32.3, 43.7, 65.6, 57.3 and 61.3. This shows a decided improvement in the medical colleges. Thirty-nine state licensing boards, to some extent at least, are utilizing their legal power to refuse recognition to medical colleges which do not meet the requirements in the respective states. In the other eleven states, however, and in the District of Columbia, this table indicates either that the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else that the boards are not exercising that authority. It is evident that if the graduates of low-standard medical colleges are not eligible for license in the majority of states, they will flock to the other ten which still grant them recognition. These ten states—Arizona, California, Idaho, Kansas, Massachusetts, Nevada, Oregon, Utah, Washington and Wyoming—and the District of Columbia, therefore, will remain the dumping ground for the output of low-grade medical colleges, until the licensing boards obtain the needed legal authority, and until they take action in the matter. Arkansas and Connecticut are also registering through their separate sectarian licensing boards graduates of medical colleges not recognized in the majority of other states. No examinations were held during the year by the Arkansas Homeopathic Board, and from the Florida Eclectic Board no report was received.

TABLE 3.—TOTAL RESULTS

Comparison with Previous Years

Year	All Candidates Examined				Recent Graduates		Older Graduates		Non-Graduates		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5650	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6071
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	671	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	......	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	.....	......	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	.....	......	1031	4185

Source of Candidates Registered by Examination

Of the 3,154 physicians registered by examination in 1918, 2,109, or 66.9 per cent., graduated from Class A medical colleges; 544, or 17.2 per cent., were from Class B medical colleges; and 288,[1] or 9.1 per cent., were from Class C medical colleges. Of all candidates examined, 213, or 6.8 per cent., came from medical colleges which have ceased to exist and from foreign medical colleges. A comparison of these figures with the results for 1917, as shown in Table 2, will be interesting.

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[1] Of this number, 98 were graduates of osteopathic colleges who were licensed as "physicians and surgeons" in California and Colorado.

TABLE F.—COLLEGES HAVING FORTY OR MORE EXAMINED

COLLEGE	Graduates of All Years					Graduates of 1914-1918					Graduates of 1913 and Previous					Graduates of 1918					Marginal Number, Table A
	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	
Loyola University School of Medicine	158	136	22	13.9	21	146	129	17	11.6	16	12	7	5	41.7	8	104	96	8	7.7	8	21
Rush Medical College (University of Chicago)	143	140	3	2.1	23	127	126	1	0.8	17	16	14	2	12.5	11	99	98	1	1.0	7	23
Meharry Medical College	139	94	45	32.4	19	133	92	41	30.8	18	6	2	4	66.7	4	86	70	16	18.6	11	74
[illegible]	117	114	3	2.6	14	109	106	3	2.8	12	8	8	0	0.0	5	91	90	1	1.1	10	36
[illegible]	115	102	13	11.3	11	109	96	13	11.9	8	6	6	0	0.0	5	83	74	9	10.8	5	51
[illegible]	99	85	14	14.1	12	91	81	10	11.0	9	8	4	4	50.0	4	75	66	9	12.0	7	38
[illegible]	96	91	5	5.2	21	86	84	2	2.3	17	10	7	3	30.0	7	30	29	1	3.3	11	68
[illegible]	91	84	7	7.7	14	85	79	6	7.1	14	6	5	1	16.7	3	23	22	1	4.4	8	70
[illegible]	85	78	7	8.2	7	84	78	6	7.1	6	1	0	1	100.0	1	75	70	5	6.7	4	58
[illegible]	82	63	19	23.2	19	76	60	16	21.1	18	6	3	3	50.0	4	0	0	0	0.0	0	17
[illegible] Medical School	74	73	1	1.4	14	67	66	1	1.5	9	7	7	0	0.0	6	63	62	1	1.6	8	22
[illegible] of Medicine	72	62	10	13 9	3	70	61	9	12.9	3	2	1	1	50.0	1	54	51	3	5.6	2	53
[illegible] edical School	71	68	3	4.2	10	64	62	2	3.1	14	7	6	1	14.3	7	62	60	2	3.2	4	40
[illegible] and Flower Hospital	63	41	22	34.9	6	61	41	20	32.8	6	2	0	2	100.0	1	39	29	10	25.7	5	55
[illegible] Medical Department	60	57	3	5.0	16	58	55	3	5.2	16	2	2	0	0.0	2	33	32	1	3.0	10	32
St. Louis [illegible] of Medicine	59	58	1	1.7	6	57	57	0	0.0	6	2	1	1	50.0	1	55	55	0	0.0	4	45
Tulane [illegible] School of Med.	57	57	0	0.0	8	54	54	0	0.0	5	3	3	0	0.0	3	50	50	0	0.0	4	30
Univers[illegible] of Medicine	51	42	9	17.6	19	41	34	7	17.1	15	10	8	2	20.0	8	16	16	0	0.0	6	33
Univers[illegible] School	49	49	0	0.0	4	47	47	0	0.0	2	2	2	0	0.0	2	45	45	0	0.0	1	42
Univers[illegible] Medicine	47	46	1	2.1	14	35	35	0	0.0	10	12	11	1	8.3	7	26	26	0	0.0	3	24
Western Reserve University School of Medicine	46	45	1	2.2	4	45	45	0	0.0	4	1	0	1	100.0	1	43	43	0	0.0	3	64
Medical College of Virginia	45	35	10	22.2	10	41	31	10	24.4	9	4	4	0	0.0	4	28	26	2	7.1	4	81
Long Island College Hospital	44	41	3	6.8	4	42	40	2	4.8	2	2	1	1	50.0	2	33	31	2	6.1	2	54
University of Texas Department of Medicine	44	44	0	0.0	4	43	43	0	0.0	3	1	1	0	0.0	1	40	40	0	0.0	2	79
St. Louis College of Physicians and Surgeons	43	31	12	28.0	7	40	28	12	30.0	5	3	3	0	0.0	3	33	22	11	33.3	4	44
University of Buffalo Department of Medicine	42	35	7	16.7	6	37	31	6	16.2	4	5	4	1	20.0	4	25	22	3	12.0	1	59
Totals	1992	1771	221	11.1	....	1848	1661	187	10.1	....	144	110	34	23.6	....	1311	1225	86	6.5		

This table is interesting, since it gives data relating to the 26 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. Loyola University School of Medicine had the largest number of graduates examined in 1918. The position was held by the Chicago College of Medicine and Surgery in 1913 to 1917, inclusive; by the University of Illinois College of Medicine in 1906, 1907 and 1912; in 1908 by Jefferson Medical College, and in 1909, 1910 and 1911 by the University of Louisville Medical Department. The first place from the standpoint of the number examined, however, does not always mean [illegible] of scholarship. Note the percentage of [illegible] ercentages are for the New York Homeo- [illegible] Meharry Medical College, 32.4; St. Louis [illegible] geons, 28.0; and the Chicago College of Medicine and Surgery, 23.2.

Of the 5 colleges having 100 or more examined, only 2 have failure percentages of less than 10, while the others stand out prominently with large failure percentages.

Of the 21 colleges having between 40 and 100 graduates examined, 13 had failure percentages of less than 10, 4 had failure percentages between 10 and 20 and 4 had failure percentages of over 20 per cent.

The average percentage of failures for these larger colleges for graduates of 1913 and previous years was 23.6; for graduates of 1914 to 1918 inclusive (recent graduates), 10.1; for graduates of 1918, 6.5, and for graduates of all years, 11.1. Of the 3,140 graduates of the 80 colleges in the United States which had graduates examined by state boards in 1918, these larger (32.5 per cent. of all) schools furnished 1,992, or 63.4 per cent., of the graduates examined.

Study of Totals and Percentages

A study of totals and percentages as compared with previous years is of interest. The total *examined* in 1918—3,637—is the lowest number of candidates examined for license in any year since the compiling of these statistics began (see Table 3). The number examined was 1,093 less than in 1917; 1,213 less than in 1916; 1,676 less than in 1915, and 4,398 less than in 1906, when 8,035 candidates were examined. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables H, I, J and K. By all methods—examination, reciprocity, under exemption, etc.—4,185 physicians were licensed during 1918, or 1,238 less than in 1917, 1,687 less than in 1916, and 3,680 less than in 1906, when 7,865 physicians were licensed.

Other deductions from the larger tables, presented in Tables E, F and G, are worthy of special study.

TABLE G.—PHYSICIANS EXAMINED BY STATE BOARDS, 1914 TO 1918, INCLUSIVE

STATES	1914		1915		1916		1917		1918		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	115	60	79	45	55	36	45	21	20	9	485	314	171	35.2
Alaska	4	0	6	0	11	1	2	0	1	0	25	24	1	4.0
Arizona	26	16	10	7	33	9	32	5	33	8	179	134	45	25.1
Arkansas	97	16	75	7	67	11	80	12	68	4	437	387	50	11.4
California	113	45	137	39	146	8	235	94	203	71	1091	834	257	23.5
Colorado	31	1	19	5	25	8	38	2	44	10	183	157	26	14.2
Connecticut	46	8	46	17	41	20	72	22	39	14	325	244	81	24.9
Delaware	18	0	13	0	13	2	14	0	10	1	71	68	3	4.2
Dist. of Columbia	47	12	51	13	33	14	26	7	37	4	244	194	50	20.5
Florida	106	37	83	25	68	18	44	12	21	8	422	322	100	23.7
Georgia	179	21	176	17	133	7	100	2	48	2	685	636	49	7.1
Idaho	19	2	23	1	29	0	20	2	16	0	112	107	5	4.5
Illinois	484	110	439	64	517	91	487	101	367	57	2717	2294	423	15.6
Indiana	48	2	49	3	49	4	39	2	43	6	245	228	17	6.9
Iowa	77	1	85	4	82	2	45	1	50	1	348	339	9	25.8
Kansas	37	4	29	4	32	1	24	3	20	0	154	142	12	7.8
Kentucky	59	7	83	7	66	10	68	16	40	2	358	316	42	11.7
Louisiana	76	24	69	21	68	10	44	13	50	6	381	307	71	19.4
Maine	54	11	63	6	25	2	33	1	27	3	225	202	23	10.2
Maryland	105	27	111	29	96	30	82	11	54	5	550	448	102	18.5
Massachusetts	226	97	238	65	166	40	219	42	228	18	1339	1077	262	19.6
Michigan	138	2	120	6	135	5	125	3	97	4	635	615	20	3.1
Minnesota	47	3	59	6	56	1	60	0	68	0	300	290	10	3.3
Mississippi	51	17	84	15	48	29	23	5	12	0	284	218	66	23.2
Missouri	195	33	200	22	161	13	166	12	143	21	966	865	101	10.4
Montana	58	25	48	16	38	14	43	24	20	7	293	207	86	29.3
Nebraska	66	6	70	6	52	0	63	0	44	1	308	295	13	4.2
Nevada	7	3	12	1	10	1	8	0	5	1	48	42	6	12.5
New Hampshire	36	6	6	1	10	0	6	0	4	2	71	62	9	12.7
New Jersey	41	13	71	8	72	10	26	6	16	1	264	226	38	14.5
New Mexico	8	2	5	0	5	1	...	...	2	0	23	20	3	13.0
New York	501	169	618	165	523	159	600	146	456	117	3454	2698	756	21.9
North Carolina	81	37	106	30	96	18	65	10	49	3	495	397	98	19.7
North Dakota	15	1	10	5	15	5	6	1	6	3	67	52	15	22.4
Ohio	146	18	149	3	182	5	185	4	142	6	840	804	36	4.3
Oklahoma	48	12	50	13	52	8	52	2	24	0	261	226	35	13.4
Oregon	76	42	56	30	38	17	37	7	35	7	345	242	103	29.8
Pennsylvania	101	22	208	24	233	33	241	12	168	22	1064	951	113	10.6
Rhode Island	27	5	26	6	27	7	22	1	13	4	138	115	23	16.7
South Carolina	68	37	53	36	53	24	37	29	17	12	366	328	138	37.7
South Dakota	25	4	25	0	18	2	18	1	14	0	107	100	7	6.5
Tennessee	149	205	101	4	128	20	167	10	103	19	906	648	258	28.5
Texas	152	11	136	11	90	13	119	5	82	2	621	579	42	6.8
Utah	13	3	21	1	15	0	11	0	10	1	75	70	5	6.7
Vermont	28	0	36	0	17	0	13	1	24	0	119	118	1	0.8
Virginia	98	10	100	8	99	8	64	4	50	6	447	311	36	8.1
Washington	92	5	75	14	48	4	57	7	59	7	368	331	37	1.0
West Virginia	51	4	70	7	58	2	45	7	16	4	264	240	24	9.1
Wisconsin	81	4	74	10	72	4	40	3	34	2	324	301	23	7.9
Wyoming	4	0	13	0	17	0	13	0	22	2	71	69	2	2.8
Totals	5,570		5,313		4,850		4,730		3,637		24,100			
Registered	4,370		4,486		4,123		4,061		3,154			20 194		
Rejected	1,200		827		727		669		483				3,906	
Per cent. rejected	21.6		15.6		15.0		14.1		13.2					16.2

This table gives the number of candidates registered and rejected on examination by each state during each of the last five years. The last four columns give the totals for the five years and the percentage rejected by each state.

Three states registered over 1,000 candidates by examination in the five years, these being New York, Illinois and Massachusetts. Over 2,000 were registered in only two states, New York with 2,698 and Illinois with 2,294. Altogether 20,194 physicians were registered by examination in five years, an average of 4,039 each year.

The five highest percentages of rejections for the five years were in South Carolina, 37.7; Alabama, 35.2; Oregon, 29.8; Montana, 29.3; Tennessee, 28.5. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined during the last five years, and for that reason would be expected to have higher percentages rejected. On the other hand, in several states the boards refused to recognize certain colleges and eliminated many candidates prior to the examination by a scrutiny of credentials, and as a result the percentages of failures on examinations are lower than otherwise would be the case. For rejected only 4.3 per cent. of those who took their examinations. aduates of sixteen medical colleges are not eligible for examinations. This table therefore should be studied Table D.

percentages were in Vermont, 0.8; Washington, 1.0; an, 3.1, and Minnesota, 3.3.

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TABLE H.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1918

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1914-1918	Graduates, 1913 and Previous	Graduates of Nondescript Colleges			
Alabama	19	1	....	6	....	26
Alaska	....	1	....	....	....	1
Arizona	10	23	....	....	....	33
Arkansas	57	11	....	13	....	81
California	124	2	77	139	....	342
Colorado	19	4	21	42	11	97
Connecticut	34	5	....	7	....	46
Delaware	9	1	....	14	....	24
District of Columbia	31	6	....	4	....	41
Florida	3	18	....	....	....	21
Georgia	46	2	....	24	....	72
Idaho	3	11	2	15	....	31
Illinois	351	16	....	25	....	392
Indiana	40	3	....	15	....	58
Iowa	47	3	....	29	....	79
Kansas	18	2	....	36	....	56
Kentucky	34	6	....	11	3	51
Louisiana	43	7	....	7	....	57
Maine	21	6	....	5	....	32
Maryland	52	2	....	19	....	73
Massachusetts	194	33	1*	....	....	228
Michigan	97	....	....	48	....	145
Minnesota	64	1	3*	29	....	97
Mississippi	12	....	....	3	....	15
Missouri	133	10	....	43	....	186
Montana	9	11	....	....	....	20
Nebraska	44	....	....	33	....	77
Nevada	3	2	....	11	....	16
New Hampshire	2	1	1	3	....	7
New Jersey	12	4	....	85	....	101
New Mexico	1	1	....	4	27	33
New York	435	21	....	32	8	496
North Carolina	43	6	....	18	....	67
North Dakota	2	4	....	5	....	11
Ohio	134	8	....	33	....	175
Oklahoma	18	6	....	49	....	73
Oregon	18	17	....	....	....	35
Pennsylvania	155	13	....	4	....	172
Rhode Island	11	2	....	....	....	13
South Carolina	16	1	....	....	....	17
South Dakota	9	5	....	....	....	14
Tennessee	100	3	....	1	10	114
Texas	77	5	....	67	....	149
Utah	10	....	....	13	....	23
Vermont	22	2	....	1	....	25
Virginia	42	8	....	28	....	78
Washington	27	26	6	....	....	59
West Virginia	14	2	....	25	....	41
Wisconsin	29	5	....	20	....	51
Wyoming	16	6	....	6	....	28
Totals	2710	333	111	972	59	4185

* Nongraduates.

This table shows the total number registered during 1918 in each state by the various methods. The first three columns show those registered by examination: the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1913 and previous years) and the third column shows a few nongraduates and osteopaths who were given licenses as physicians and surgeons. The fourth column shows the number licensed through reciprocity, by endorsement of other state licenses and by certificates of the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico). California granted the physician's license to 77 out of 133 applicants who graduated from osteopathic colleges. Of these, 34 were given merely an oral examination.

It is interesting to note that as a rule states which registered large numbers through reciprocity, such as New Jersey, Oklahoma and Michigan, for example, examined very few old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. There were no reciprocal registrations reported for ten states, including Alaska.

The last column shows the total number of physicians registered by all methods in each state during the year. Only three states registered over 300 each, these being New York, 496; Illinois, 392, and California, 342. Seventeen states registered less than 50 each. The largest registration was 496 in New York, and the smallest was 1 in Alaska. The total registered by all methods was 4,185, a decrease of 1,238 below the total registered in 1917. This marked decrease is undoubtedly due to the war enlistments.

STUDY OF COLLEGES BY STATE GROUPS

Table E gives the results for the group of colleges located in each state. It shows what states are furnishing the largest number of physicians, and the failure percentages indicate the kind of training these colleges are furnishing, so far as may be judged from the results of state board examinations. Of the thirty-one states having medical colleges which grant degrees, nine furnished 100 or more candidates examined, four states furnished more than 200 each, and two furnished over 500 each. Illinois furnished 559 graduates, the largest number, followed by New York with 518, Massachusetts with 260, Pennsylvania with 256, and Tennessee with 212. Of the thirty-one groups of colleges, twenty-one had failure percentages of less than 10 per cent., eight had failure percentages between 10 and 20, and two—South Carolina and Tennessee—had 20 per cent. or more of failures. Other deductions are given in the legend to the table.

STUDY OF LARGER COLLEGES

Table F is also based on the three large tables, and gives the results of state board examinations as they affect the twenty-six largest medical colleges. Although these colleges represent 32.5 per cent. of the eighty medical colleges in the United States having graduates examined, they furnish 63.4 per cent. of all candidates for license coming from medical schools of the United States. This table shows, however, that the graduating of large classes by a medical college does not prove excellence of teaching, since three of the colleges having 100 or more examined have high failure percentages. The larger the college from the standpoint of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness both to medical students and to the public, such schools should strengthen their teaching facilities or reduce the size of their classes.

TOTAL RESULTS FOR FIVE YEARS

Table G shows the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 17, 1918, p. 544, Table 11) shows—what would be expected—that the states having the largest number of medical graduates examined the largest

TABLE I.—CHARACTER OF PHYSICIANS LICENSED IN 1918

Marginal Number	STATES	By Examination					On Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	16	4	0	0	20	2	1	0	3	6	18	5	0	3	26	1
2	Alaska	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	2
3	Arizona	11	4	1	17	33	0	0	0	0	0	11	4	1	17	33	3
4	Arkansas	7	28	26[1]	7	68	5	4	0	4	13	12	32	26[1]	11	81	4
5	California	37	58	105[2]	3	203	30	11	11	87	139	67	69	116[2]	90	342	5
6	Colorado	16	3	24[3]	1	44	14	4	0	35	53	30	7	24[3]	36	97	6
7	Connecticut	35	3	0	1	39	2	1	1	3	7	37	4	1	4	46	7
8	Delaware	6	4	0	0	10	7	0	2	5	14	13	4	2	5	24	8
9	District of Columbia	33	1	0	3	37	4	0	0	0	4	37	1	0	3	41	9
10	Florida	3	2	0	16	21	0	0	0	0	0	3	2	0	16	21	10
11	Georgia	38	8	1	1	48	8	3	0	13	24	46	11	1	14	72	11
12	Idaho	5	0	2	9	16	6	1	0	8	15	11	1	2	17	31	12
13	Illinois	188	159	9	11	367	11	2	2	10	25	199	161	11	21	392	13
14	Indiana	37	4	0	2	43	8	3	0	4	15	45	7	0	6	58	14
15	Iowa	40	7	1	2	50	8	6	4	11	29	48	13	5	13	79	15
16	Kansas	18	1	0	1	20	11	8	4	13	36	29	9	4	13	56	16
17	Kentucky	20	17	2	1	40	6	1	3	4	14	26	18	5	5	54	17
18	Louisiana	43	2	0	5	50	2	2	0	3	7	45	4	0	8	57	18
19	Maine	21	1	0	5	27	3	0	0	2	5	24	1	0	7	32	19
20	Maryland	50	2	1	1	54	7	1	1	10	19	57	3	2	11	73	20
21	Massachusetts	188	8	10	22	227	0	0	0	0	0	188	8	9	22	227	21
22	Michigan	96	0	1	0	97	22	3	0	23	48	118	3	1	23	145	22
23	Minnesota	67	1	0	0	68	18	4	0	7	29	82	5	0	7	94	23
24	Mississippi	12	0	0	0	12	0	0	0	3	3	12	0	0	3	15	24
25	Missouri	76	9	50	8	143	9	17	2	15	43	85	26	52	23	186	25
26	Montana	7	4	0	9	20	0	0	0	0	0	7	4	0	9	20	26
27	Nebraska	42	2	0	0	44	13	5	0	15	33	55	7	0	15	77	27
28	Nevada	1	3	0	1	5	2	0	0	9	11	3	3	0	10	16	28
29	New Hampshire	3	0	1	0	4	0	0	0	3	3	3	0	1	3	7	29
30	New Jersey	12	0	0	4	16	41	6	1	37	85	53	6	1	41	101	30
31	New Mexico	0	1	0	1	2	10	3	0	18	31	10	4	0	19	33	31
32	New York	402	39	7	8	456	15	5	0	20	40	417	44	7	28	496	32
33	North Carolina	42	2	1	4	49	4	4	0	10	18	46	6	1	14	67	33
34	North Dakota	2	1	0	3	6	1	0	0	4	5	3	1	0	7	11	34
35	Ohio	106	30	1	5	142	14	3	0	16	33	120	33	1	21	175	35
36	Oklahoma	3	16	2	3	24	7	10	3	29	49	10	26	5	32	73	36
37	Oregon	18	4	0	13	35	0	0	0	0	0	18	4	0	13	35	37
38	Pennsylvania	154	7	0	7	168	3	0	0	1	4	157	7	0	8	172	38
39	Rhode Island	10	1	1	1	13	0	0	0	0	0	10	1	1	1	13	39
40	South Carolina	16	0	0	1	17	0	0	0	0	0	16	0	0	1	17	40
41	South Dakota	9	2	1	2	14	0	0	0	0	0	9	2	1	2	14	41
42	Tennessee	30	58	14	1	103	10	0	0	1	11	40	58	14	2	114	42
43	Texas	60	14	3	5	82	11	16	18[4]	22	67	71	30	21[4]	27	149	43
44	Utah	9	1	0	0	10	5	1	1	6	13	14	2	1	6	23	44
45	Vermont	24	0	0	0	24	0	0	0	1	1	24	0	0	1	25	45
46	Virginia	41	3	3	3	50	13	4	0	11	28	54	7	3	14	78	46
47	Washington	26	9	10	14	59	0	0	0	0	0	26	9	10	14	59	47
48	West Virginia	6	9	0	1	16	9	4	0	12	25	15	13	0	13	41	48
49	Wisconsin	22	7	0	5	34	5	2	0	13	20	27	9	0	18	54	49
50	Wyoming	1	5	11	5	22	1	3	1	1	6	2	8	12	6	28	50
	Totals	2109	544	288	213	3154	347	138	54	492	1031	2456	682	342	705	4185	

1. Of the 81 physicians licensed in Arkansas, the Regular Board licensed by examination 7 Class A, 28 Class B and 7 miscellaneous graduates and by reciprocity 5 Class A, 4 Class B and 4 miscellaneous graduates, a total of 13. The Eclectic Board licensed by examination 26 Class C graduates. The Homeopathic Board reported no candidates licensed either by examination or by reciprocity.

2. Of the 105 graduates of Class C colleges licensed in California, 77 were graduates of osteopathic colleges which are not generally recognized as medical colleges by state licensing boards, and 34 of these were required to take only an oral examination. Altogether 133 osteopaths were admitted to the examination for licensure as physicians and surgeons and 77 were so licensed.

3. Of the 24 graduates of Class C colleges licensed in Colorado, 21 were graduates of osteopathic colleges, institutions inferior in most respects to Class C medical schools which are reported as not recognized in Colorado.

4. Texas licensed 3 Class C graduates by examination (although Class C colleges are reported as not recognized) and 18 Class C graduates (including 11 osteopaths) were licensed by reciprocity, a total of 21.

This table shows the classification of the colleges from which most of the physicians graduated who were licensed in 1918. Graduates of colleges which became extinct prior to 1907 who were examined, and all reciprocity licentiates who graduated prior to 1907, are unclassified and included under "miscellaneous" since it was in 1907 that the Council on Medical Education completed its first classification of all medical colleges.

It will be seen that five states accepted Class C graduates through reciprocity where they did not license any by examination. On the whole, however, 287 were licensed by examination where only 54 were registered through reciprocity.

By both examination and reciprocity, the largest numbers of Class C graduates were licensed in California, 116 (including 77 osteopaths); Missouri, 52; Arkansas, 26 (all by the Eclectic Board); Colorado, 24 (including 21 osteopaths); and Texas, 21. The largest numbers of Class B graduates were licensed in Illinois, 161; California, 69; Tennessee, 58; New York, 44; Ohio, 33, and Arkansas, 32.

Of all physicians licensed, 2,456, or 58.7 per cent., were graduates of Class A medical schools; 682, or 16.3 per cent., from Class B schools; 342, or 8.2 per cent., from Class C schools, and 705, or 19.2 per cent., from miscellaneous colleges.

TABLE J.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1918

STATE BOARDS OF	Total Reg. by Recip., Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Services*	Nat'l. Bd. Med. Ex.	Alaska, Hawaii, etc.	Foreign
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Alabama	6	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	2	..	..	..
Arkansas	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	1	..	2	..	1	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..
California	139	..	4	3	..	2	..	..	..	..	..	..	16	7	13	1	..	..	..	1	2	2	6	..	10	..	6	5	2	..	1	15	1	..	5	2	3	6	..	..	2	1	2	1	1	3	7	..	4	2	2	..	1	..
Colorado	42	1	..	..	..	..	..	..	1	..	..	..	6	1	3	1	..	..	..	..	..	1	2	1	4	1	7	1	..	..	2	1	..	..	1	1	..	3	..	..	..	..	2	..	..	..	..	..	1	1	..	..	..	..
Connecticut	7	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Delaware	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	7	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Dist. of Col.	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Georgia	24	7	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	3	..	..	2	..	..	..	..	..	2	..	..	1	3	..	1	..	..	..	..	..	..
Idaho	15	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	4	..	..	..	..	..	..	4	..	..	5	..	..	..	..	..	..	..
Illinois	25	..	..	..	..	..	..	..	..	..	..	..	..	5	2	1	..	..	..	1	..	2	1	..	5	..	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1	..	..	2	..	..	..	..	2	..	..	..
Indiana	15	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	3	..	1	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..
Iowa	29	..	..	..	..	..	..	..	..	..	..	..	12	..	..	1	..	..	..	1	..	..	..	..	4	..	5	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	..	..
Kansas	36	1	..	..	1	..	..	..	..	..	..	..	9	1	4	..	1	..	..	..	..	1	..	..	10	..	2	..	..	..	..	..	..	..	..	4	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Kentucky	11	..	..	..	..	1	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	..	..	..
Louisiana	7	..	..	..	..	..	..	..	..	..	2	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Maine	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..
Maryland	19	..	..	..	..	1	..	..	2	..	..	..	1	..	..	..	..	1	..	..	..	1	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	5	..	3	..	..	..	..	..	..
Michigan	48	..	..	..	..	1	..	..	2	..	..	..	16	3	1	..	5	..	..	2	..	..	..	1	2	..	1	..	..	..	..	..	..	..	3	..	..	4	..	..	..	3	1	..	..	1	..	1	1	..	..	..	..	..
innesota	29	..	..	1	..	..	..	..	..	..	..	..	7	1	1	..	..	..	..	1	..	3	..	..	1	..	3	..	..	..	..	..	1	3	..	..	..	..	..	..	1	1	1	..	..	1	..	..	3	..	..	..	..	..
ississippi	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
ssouri	43	..	..	..	..	..	..	..	..	..	..	..	11	1	4	11	3	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	7	..	..	..	..	..	1	..	..	..	..	..	..
ebraska	33	..	..	..	..	..	..	..	1	..	1	..	8	..	4	3	..	..	..	..	1	..	1	..	3	..	..	..	..	..	..	1	..	..	1	1	..	2	..	..	1	..	..	..	..	..	..	..	..	1	3	1	..	..
evada	11	..	..	..	..	1	..	..	..	..	..	..	3	..	1	..	..	..	1	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Jersey	85	..	..	..	..	..	1	4	1	..	..	..	2	..	..	..	..	..	2	7	3	1	..	..	1	..	..	..	..	..	..	42	1	..	1	..	..	15	1	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..
New Mexico	4	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	32	..	..	..	..	..	..	7	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	13	..	..	..	..	3	..	..	3	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..
North Carolina	18	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	..	..	..	1	..	1	..	1	1	..	..	..	..	..	..	2	..	..	1	..	..	..	..	1	..	1	..	..	..	5	..	1	..	..	..	..	..	..
North Dakota	5	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ohio	33	3	..	..	1	..	..	..	..	..	..	..	5	1	1	1	3	..	..	2	..	4	1	..	1	..	..	..	..	..	..	2	..	..	..	..	..	4	..	..	..	..	..	..	1	..	..	2	1	..	..	..	..	..
Oklahoma	49	..	..	9	..	..	..	..	..	..	1	..	..	..	1	5	4	..	..	..	..	..	..	1	7	..	4	..	..	..	1	..	..	..	2	..	..	..	..	..	..	3	9	..	..	..	..	2	..	..	..	..	..	..
Pennsylvania	4	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tennessee	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Texas	67	..	..	10	..	..	1	..	1	..	1	..	8	1	..	3	4	..	..	..	..	1	2	4	7	..	1	1	..	..	..	..	..	..	..	12	..	..	..	..	..	7	..	..	..	1	..	1	1	..	..	..	..	..
Utah	13	..	..	..	1	3	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	2	..	..	..	..	1	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vermont	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Virginia	28	..	..	..	..	..	..	..	4	1	..	..	..	1	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	6	..	..	..	..	5	..	1	..	4	..	..	..	..	..	1	..	..	1	..	..	..
West Virginia	25	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	6	1	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	1	..	1	..	..	..	1	..	..	..	7	..	..	..	..	..	..	..	..
Wisconsin	20	..	..	..	1	..	..	..	..	..	1	..	7	..	1	..	..	..	..	1	..	1	3	..	..	..	1	..	..	..	..	2	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Wyoming	6	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Totals	972	12	4	24	5	10	2	11	14	2	19	..	125	30	40	28	31	5	8	25	10	24	20	11	65	1	36	7	4	15	6	74	16	4	27	28	7	57	1	4	6	34	23	6	7	36	12	16	13	4	10	1	1	..
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

* U. S. Army, Navy and Public Health Service.

This table shows the number of physicians registered by each state through reciprocity during 1918. Read from left to right, it shows the total number of physicians registered through reciprocity in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named in the corresponding lines, and at the bottom the total number of candidates leaving the state to go elsewhere. For example, read from left to right, the table shows that Maine registered five candidates through reciprocity in 1918 and that, of these candidates one came from Illinois, one from Ohio and three from Vermont. Read from above downward the table shows that from Maine two candidates each went to the District of Columbia and New Jersey, one each to Delaware, Indiana, Nevada and Virginia, the total leaving the state to go elsewhere being eight. The line at the bottom shows in what states physicians who registered through reciprocity obtained their original licenses. From Illinois 125 candidates, the largest number, obtained their original licenses. New York follows with 74, Missouri with 65, Pennsylvania with 57 and Iowa with 40. The total number licensed by indorsement of licenses or certificates obtained in other states was 972.

TABLE K.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1914	1915	1916	1917	1918	
Alabama	1	1	4	8	12	26
Arizona	13	6	5	6	4	34
Arkansas	20	37	56	41	24	178
California	2	3	2	2	5	14
Colorado	25	15	8	14	10	72
Connecticut	1	3	1	0	2	7
Delaware	2	6	8	4	11	31
District of Columbia	22	18	20	16	14	90
Florida	2	4	2	1	2	11
Georgia	17	22	30	28	10	107
Idaho	5	1	5	4	0	15
Illinois	197	198	178	176	125	874
Indiana	44	43	27	22	30	166
Iowa	52	46	32	44	40	214
Kansas	42	39	33	32	28	174
Kentucky	35	48	40	44	31	198
Louisiana	10	16	16	13	5	60
Maine	11	12	13	8	8	52
Maryland	44	38	45	34	25	186
Massachusetts	7	19	22	20	10	78
Michigan	58	42	34	42	24	200
Minnesota	23	34	19	28	20	124
Mississippi	10	10	18	59	11	108
Missouri	98	104	93	84	65	444
Montana	3	1	1	1	1	7
Nebraska	37	50	28	49	36	200
Nevada	8	9	7	5	7	36
New Hampshire	3	4	11	7	4	29
New Jersey	19	22	17	16	15	89
New Mexico	9	5	2	2	6	24
New York	101	73	84	83	74	415
North Carolina	7	13	17	9	16	62
North Dakota	5	6	4	13	4	32
Ohio	71	47	51	43	27	239
Oklahoma	22	28	26	17	28	121
Oregon	3	2	2	3	7	17
Pennsylvania	86	79	74	62	57	358
Rhode Island	1	2	1	3	1	8
South Carolina	2	12	7	7	4	32
South Dakota	4	7	3	3	6	23
Tennessee	42	34	65	67	34	242
Texas	23	12	15	20	23	93
Utah	8	6	16	13	6	49
Vermont	21	25	15	13	7	81
Virginia	40	30	36	42	36	184
Washington	15	10	12	10	12	59
West Virginia	33	36	25	21	16	131
Wisconsin	41	29	32	28	13	143
Wyoming	3	5	1	1	4	17
Alaska, Hawaii, etc.	2	....	1	1	1	5
U. S. Army	2	1	....	....	2	5
U. S. Navy	....	....	1	1	7	9
U. S. P. H. Service	....	....	....	....	1	1
Natl. Bd. of Med. Exam.	....	....	....	2	1	3
Canada	1	....	1	....	....	2
Foreign and Misc.	2	1	5	1	....	9
Totals	1355	1314	1271	1279	972	6191

This table shows that 6,191 candidates were registered through reciprocity during the last five years.—Registration by reciprocity gradually increased from 1905 to 1914, since which time there has been a gradual decrease as the total of physicians licensed by other methods has decreased. This year the marked decrease in the total registered has been due largely to the war. A study of the totals for the different states shows that of the 6,191 registered during the five years 874, or 11.1 per cent., obtained their original licenses in Illinois. New York could easily lead Illinois but reciprocal relations have been established with only seven other states.

Seven states—Connecticut (regular board), Florida, Massachusetts, Montana, Oregon, Rhode Island, and Washington—do not have reciprocal relations and would not appear in this table except for the fact that some states, like California, Colorado, Delaware, New Hampshire, New Jersey and North Carolina will accept a physician's credentials if satisfactory, whether the state issuing the original license returns the favor or not.

number of physicians. New York leads, having examined 3,597 candidates in five years, followed by Illinois with 2,958. The five states having the next highest numbers are Massachusetts with 1,382, Pennsylvania with 1,278, Tennessee with 1,184, and Missouri with 1,027.

TOTAL REGISTRATION IN 1918

The tables thus far described have referred only to the results of *examinations* and to those registered on that basis. Table H, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether, 4,185 physicians were registered by all methods during 1918, as compared with 5,423 in 1917, 5,461 in 1916, 5,872 in 1915, 5,797 in 1914, and 7,865 in 1906. There has been a constant decrease in the totals licensed by all methods until 1915, when there was an increase of 79. The total registered in 1918 was 1,238 less than in 1917, 1,276 less than in 1916, and 1,687 less than in 1915. By reciprocity or under exemption clauses, 1,031 were licensed in 1918, as compared with 1,362 in 1917, 1,338 in 1916, 1,386 in 1915, and 1,427 in 1914. Only four undergraduates were registered during the past year.

TABLE L.—STATE REQUIREMENTS OF PRELIMINARY EDUCATION

State Examining Board of	One Year of College Work		Two Years of College Work	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates
Alabama	....	....	1915-16	1919
Alaska	1914-15	1918	1918-19	1922
Arizona	1914-15	1918	1918-19	1922
Arkansas	1915-16	1919	1918-19	1922
California	1915-16	1919	....	....
Colorado	1908-09	1912	1910-11	1914
Connecticut	1911-12	1915	....	....
Delaware*	....	....	....	....
District of Columbia†	....	....	....	....
Florida	1914-15	1918	1918-19	1922
Georgia*	....	....	1918-19	1922
Idaho*	....	....	....	....
Illinois	1915-16	1919	1918-19	1922
Indiana	1910-11	1914	1911-12	1915
Iowa	....	....	1911-12	1915
Kansas	1910-11	1914	1918-19	1922
Kentucky	1914-15	1918	....	....
Louisiana	1915-16	1919	1918-19	1922
Maine	1915-16	1919	....	....
Maryland	1014-15	1918	1918-19	1922
Massachusetts†	....	....	....	....
Michigan	1914-15	1918	1918-19	1922
Minnesota	....	....	1908-09	1912
Mississippi	1915-16	1919	1919-20	1923
Missouri*	....	....	....	....
Montana	1914-15	1918	1918-19	1922
Nebraska*	....	....	....	....
Nevada*	....	....	....	....
New Hampshire	1914-15	1918	1915-16	1919
New Jersey	1915-16	1919	1916-17	1920
New Mexico	1914-15	1918	1918-19	1922
New York	1917-18	1921	1918-19	1922
North Carolina	1914-15	1918	1918-19	1922
North Dakota	....	....	1908-09	1912
Ohio*	....	....	....	....
Oklahoma	1914-15	1918	1917-18	1921
Oregon†	....	....	....	....
Pennsylvania	1914-15	1918	....	....
Rhode Island	1914-15	1918	1918-19	1922
South Carolina	....	....	1918-19	1922
South Dakota	1908-09	1912	1911-12	1915
Tennessee	1916-17	1920	1918-19	1922
Texas	1914-15	1918	....	....
Utah	1913-14	1917	....	....
Vermont	1913-14	1917	1918-19	1922
Virginia	1914-15	1918	1917-18	1921
Washington	1914-15	1918	1918-19	1922
West Virginia	1917-18	1921	....	....
Wisconsin	....	....	1915-16	1919
Wyoming†	....	....	....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.

There are now forty states which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number 32 now require the two year standard. These states, the number of college years required and the time the higher requirements became or become effective are given in the table.

Over 100 were registered by all methods in eleven states, over 200 in four, and over 300 in three, the largest numbers registered being 496 in New York, 392 in Illinois, and 342 in California. Of those licensed in California, 139, or 40.7 per cent., were registered by the endorsement of licenses granted by the boards of other states. California also registered as physicians and surgeons 77 graduates of osteopathic colleges, and 21 osteopaths were so licensed in Colorado.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1918

Table I is of special interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1918. Of the 4,185 candidates registered, 3,154 were licensed by examination and 1,031 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among those graduating from "Miscellaneous Colleges." Of the 3,154 candidates licensed by examination, 2,109, or 66.9 per cent., were from Class A schools; 544, or 17.2 per cent., were from Class B schools; 288, or 9.1 per cent., were from Class C schools, and 213 graduated prior to 1907 or came from foreign colleges. Among the graduates of Class C schools are included 98 graduates of osteopathic colleges who were granted the physician and surgeon's license in California and Colorado. Of the 1,031 candidates licensed by reciprocity, 492, or 47.7 per cent., graduated prior to 1907 and are, therefore, included among miscellaneous or unclassified colleges; 347, or 33.7 per cent., were graduates of Class A medical schools; 138, or 13.4 per cent., were graduates of Class B schools, and 54, or 5.2 per cent., were from Class C schools. Altogether, of the 4,185 candidates registered in 1918, 2,456, or 58.7 per cent., were graduates of Class A medical schools; 682, or 16.3 per cent., were from Class B schools; 342, or 8.2 per cent., were from Class C schools, and for 705, or 16.8 per cent., the colleges are unclassified.

TABLE M.—ADVANCES IN STATE LICENSE REQUIREMENTS IN FOURTEEN YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1918	Increase	
Preliminary Education—				
Any requirement	20	46	26	3^{1}
A standard four-year high school education or higher	10	41	31	5^{2}
One year or more of college work	0	40^{3}	32	9^{3}
Two years of college work as a minimum	0	32^{3}	32	17^{3}
That all applicants be graduates of a medical college	36	49	13	0
That all applicants undergo an examination for license	45	48	3	1^{4}
Requirement of practical tests in the license examinations	1	16	15	33
Hospital intern year required	0	8^{5}	8	41
Full authority by board to refuse recognition to low-grade colleges	14	44	30	5^{6}
Boards refusing to recognize low-grade colleges*	5	42	37	7^{7}
Reciprocal relations with other states	27	41	14	8^{8}
Single boards of medical examiners	36	43	7	6^{9}

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.

1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. See Table L.
4. New Mexico.
5. Pennsylvania, 1914; New Jersey, 1916; Alaska, 1917; North Dakota and Rhode Island, 1918; Illinois, 1921, and Michigan, 1922.
6. District of Columbia, Idaho, Massachusetts, Utah and Wyoming.
7. California, Nevada and the states named in Footnote 6.
8. Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
9. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Florida, Louisiana and Maryland.

As will be noted, the largest numbers of Class C graduates were licensed in California, with 116; Missouri, with 52; Arkansas, with 26; Colorado, with 24, and Texas, with 21. All of the Class C graduates registered in Arkansas were licensed by the Eclectic board.

Illinois registered 161 Class B graduates, the largest number, followed by California, with 69; Tennessee, with 58;

New York, with 44, and Arkansas, with 32. Arkansas, California, Oklahoma and Tennessee licensed more graduates of Class B and Class C colleges than of Class A graduates.

Only Class A graduates were registered either by examination or by reciprocity in Mississippi, South Carolina and Vermont.

It is evident that in several states, particularly, more care should be taken in the recognition of medical colleges, or better methods of examination should be adopted which will provide better safeguards against those not having adequate education.

Table J gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is commonly referred to as "reciprocity," which conveys the idea that the state which accepts a license of another must be granted the same courtesy by the state issuing the original license. The term does ot always apply, however, since some state boards—Arizona, ifornia, Colorado, Delaware, Maryland, New Hampshire, v Jersey and North Carolina, as examples—accept the ysician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the thirty-seven states shown in Table J, 972 physicians—many of whom had been in practice for ten or more years—would have been compelled to undergo the ordeal of a second trying examination.

Table K shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. Of the 6,191 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 874, who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois,[2] only 415 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-two other states, while New York has established such relations with only seven.

IMPROVED STANDARDS OF LICENSURE

Table L shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The first and third columns show, respectively, when the one year and the two years of premedical college work affects students matriculating in medical colleges, and the second and fourth columns give the years in and after which all applicants for licenses in the various states are affected by the increased requirements. This table shows the rapidity with which state board requirements of preliminary education have been advanced since 1908, prior to which no state was requiring more than a four-year high school education. As will be noted, there are now thirty-eight states which have adopted the higher standard, and thirty-two of these require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table M the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in thirty-eight states as referred to in Table L. The next greatest increase (thirty-six) is in the number of states—now forty-one—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is still room for further improvement. The greatest needs are for a wider adoption of the requirement of the hospital intern year, the standard of two years of premedical college work, and—a matter of more vital importance—a more general and larger use of practical tests in the examinations. The states in which the boards are making really effective use of such examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. They are being followed to a greater or less extent in a few other states.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners, which was organized in 1915, consists of fifteen members, including the Surgeon-Generals of the Army, Navy and Public Health Services, and one other representative of each of those services, three representatives of the state medical licensing boards, and six members appointed at large. Up to Dec. 31, 1918, six examinations had been held, as shown in the following tabulation:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley; Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago; New York	16	15	1	6.3
Totals		109	87	22	20.2

Twenty-four medical schools were represented and the results were as follows:

College	Total Examined	Passed	Failed	Percentage Failed
University of California M. S.	1	1	0	0.0
University of Colorado S. of M.	1	1	0	0.0
Howard University Sch. of Med.	1	0	1	100.0
Emory University Sch. of Med.	1	1	0	0.0
Northwestern University M. S.	17	13	4	23.5
Rush Medical College	31	25	6	19.4
Indiana University Sch. of Med.	1	0	1	100.0
State Univ. of Iowa Coll. of Med.	3	2	1	33.3
Johns Hopkins Univ. Med. Dept.	8	6	2	33.3
University of Maryland Sch. of M.	1	1	0	0.0
Boston University School of Med.	1	1	0	0.0
Harvard University Med. School.	6	6	0	0.0
University of Michigan M. Sch.	2	1	1	50.0
University of Minnesota M. Sch.	2	1	1	50.0
University of Nebraska Coll. of M.	1	1	0	0.0
Columbia Univ. Coll. of P. & S.	9	9	0	0.0
Cornell University Med. Coll.	4	4	0	0.0
Univ. & Bell. Hosp. Med. Coll.	1	0	1	100.0
Western Reserve Univ. Sch. of M.	1	1	0	0.0
Jefferson Medical College	2	0	2	100.0
University of Pennsylvania S. of M.	11	10	1	9.1
University of Texas Dept. of Med.	2	2	0	0.0
University of Virginia Dept. of M.	1	1	0	0.0
McGill University Faculty of Med.	1	0	1	100.0
Totals	109	87	22	20.2

Holders of certificates from the National Board of Medical Examiners will be registered without further examination in the following fifteen states:

Colorado
Delaware
Florida
Georgia
Idaho
Iowa
Kentucky
Maryland
New Hampshire
North Carolina
North Dakota
Ohio
Pennsylvania
Rhode Island
Vermont

When the permanence of the National Board of Medical Examiners is established and the high character of its examinations is more generally recognized, it is quite probable that its certificate will be recognized by the licensing boards of a larger number, if not of all states.

IN CONCLUSION

In the gathering and publication of these statistics, the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures, the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

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[2] See Table 11, J. A. M. A. 71: 544 (Aug. 17) 1918.

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SATURDAY, APRIL 19, 1919

STATISTICS OF THE STATE BOARD EXAMINATIONS

Ve publish this week, for the sixteenth consecutive r, statistics based on official reports of examinations iducted by state medical boards, and of registrations reciprocity and other methods. During these six- n years the work has had the hearty support and peration of the executive officers of the various te licensing boards, who have furnished reports of : examinations. Every report has been carefully ked with alumni lists furnished by the deans of medical colleges, and by this cross-checking, errors ve been avoided; and when errors have been dis- vered, the state boards have been notified. Thus, not ly have these statistics been made accurate and iable, but also state board records have been cor- ted. We express our acknowledgments for the lendid cooperation of the officers of both the state ensing boards and the medical colleges by which the blication of these statistics has been made possible.

These statistics throw an important side light on th medical education and medical licensure. For ch state they show the number and character of phy- ians admitted to examinations; the character of the leges from which they graduated; the numbers who re registered and rejected, and the proportion jected. The material is so arranged that the facts garding any one college or any one state can be mpared with those, respectively, of all other colleges d states. Figures show that in some states people e well protected against illiterate and incompetent ysicians, while in others, in varying degrees, the posite situation prevails. A glaring instance relates Arkansas, where, although the regular board of edical examiners is adhering to reasonably high edu- tional standards and methods of licensure, twenty- x physicians were licensed who could not meet its quirements. This was because of the existence of a parate board of eclectic examiners. This board amined twenty-three graduates of a nominally eclec- c medical school, the Kansas City College of Medi- ne and Surgery, and licensed all of them, in face of e fact that this college is not recognized by the licensing boards of Missouri—its home state—and of thirty-four other states. And this has been going on for several years. Indeed, the reports indicate that neither the Arkansas Board of Eclectic Examiners nor the Kansas City College of Medicine and Surgery could exist without the other. It is true that a few graduates of this college were examined also by the Eclectic Board of Connecticut, but they were not so successful in that state in obtaining licenses. Arkansas and Connecticut, meanwhile, are two states which have not yet abolished their separate sectarian boards.

These statistics also call attention to the fact that during the last two years a few boards have examined and licensed osteopaths as physicians and surgeons. The objection to this procedure is not that they are osteopaths, but is based on the serious inferiority of their teaching institutions and their educational qualifications as compared with medical schools and physicians. Osteopathic colleges have been repeatedly inspected and, when measured by the same standards as were applied in the grading of medical schools, no one of them could rank higher than the lowest Class C medical college. Nevertheless, in Colorado, twenty-one osteopaths were licensed as physicians and surgeons by examination, and in Texas eleven were licensed by reciprocity, although the licensing boards of both states have reported that they do not recognize Class C medical schools. Texas also registered three graduates of Class C colleges by examination and seven by reciprocity, although they say they do not admit such graduates to their examinations. In California this year 133 osteopaths were admitted to the examination of physicians and surgeons, and seventy-seven, or about 60 per cent., were granted licenses, including thirty-four who were given merely an "oral, practical or clinical" examination.

When the collection of these statistics was begun by THE JOURNAL in 1903, returns could be obtained from only thirty-seven states, including four from which the returns were incomplete. The records could not be obtained for the other states for the very reason that records were not kept or were too imperfect to enable the boards to supply the information. This condition has been corrected, however, as evidenced by the fact that full and complete reports have been received from all state boards for the past several years.

Since 1905, the collection of the statistics became an important part of the work of the Council on Medical Education in its campaign for the improvement of medical education and licensure. The results in the improvements in medical licensure are set forth in the statistics.[1] Higher standards of preliminary education have been adopted; all states now require that applicants must have graduated from a medical school; all but one state, New Mexico, now require an examination of all applicants; a larger number of states have improved their examination by the use of practical laboratory and clinical tests; a larger number of states have obtained authority to refuse recognition to low-grade medical colleges and are making use of that authority; reciprocal relations between states have been widely extended; eight states require a hospital internship as an essential for the license, and all but a few states now have single boards of medical examiners.

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[1] Table M, p. 1155.

On medical education the effect of these statistics has been even more pronounced. The attention of medical schools was called at once to the percentages of failures of their graduates at state licensing examinations, and better methods of teaching resulted. A knowledge of the fact that in certain states graduates of various colleges were not eligible for the license unless they had completed two years of collegiate work before entering on the study of medicine, induced a number of medical schools to adopt higher entrance standards which perhaps were not willing to do so voluntarily. The Council on Medical Education has utilized these statistics also in its efforts to improve medical teaching. A classification of institutions based on the percentages of failures coincided quite closely with the first classification prepared by the Council on Medical Education and based on actual inspections. Occasionally an institution obtained a lower percentage than its actual merits warranted, but no institution having a high percentage of failures was found worthy of being included among acceptable medical schools.

Briefly, these statistics show each medical school what improvements are essential if its graduates are to succeed in examinations of state boards; what state boards are requiring as a minimum of preliminary education, and in what states the boards are refusing to examine its graduates. To each state board these statistics show, by comparison with other states, the lines along which further improvements are needed in its educational standards and methods of examination. Constant publicity has led to a general improvement in educational standards and a greater uniformity in the methods of examination by all state boards. The result has been a lessened confusion in the licensing of physicians throughout the country, and correspondingly better safeguards for the public against the licensing of incompetent practitioners.

OBSERVATIONS ON THE FUNCTIONS OF THE BLOOD SERUM PROTEINS

The comparative richness of the serum in proteins is one of the striking facts in regard to the composition of the blood. It seems surprising, therefore, that so little is decisively known regarding the origin and the functions of these proteins in the body. Only a few years ago the most widely accepted view was that the products of protein digestion were regenerated into protein during or immediately after their absorption through the alimentary wall. So long as this belief was entertained, it followed as a logical consequence that the tissue cells were nourished, so far as nitrogenous needs were concerned, from the proteins. In other words, the production of protein was a regular stage in protein assimilation.

The newer knowledge of the chemistry of diges and the phenomena of the absorption of its prod has made the older conclusion untenable. The products of the alimentary digestive processes in case of proteins are amino-acids and, possibly, peptids which enter the circulation as such, pas directly to the tissues without preliminary synthesi protein. The tissue proteins are different from blood proteins. Furthermore, the blood serum teins show minimal, if any, fluctuations during fas or after heavy feeding, a fact suggesting that content in the circulating medium is more or less pendent of the immediate absorption of protein cursors. The fact that the content of proteins in blood maintains a constancy cannot necessarily taken as evidence, however, that the circulating teins are not directly derived from the food pro or play no part in the nutrition of the body cells. content of blood sugar—a substance referable to food intake—is remarkably constant, owing to rapid regulatory transfer that takes place betw food, tissues and blood.

Investigators[1] at the George Williams Hooper Fo dation for Medical Research at the University of C ifornia Medical School have attempted to throw light on the source of the blood serum proteins following their regeneration after plasma depleti By this is meant the withdrawal of whole blood and replacement of the washed red corpuscles suspend in some modification of a protein-free medium physiologic sodium chlorid or Locke's solution. result was that when the plasma proteins were reduced experimentally to a low level (amounting between 20 and 33 per cent. of normal), regenerati was a slow and difficult procedure, often occupyin many days. If such depletion is assumed, as seem reasonable, to be a maximal stimulus for body pr duction of serum protein, it appears from the res quoted that the body can manufacture them only small amounts, even in an emergency. It is true the regeneration is somewhat more rapid and com on a meat or mixed diet, as compared with fa But, as the California investigators remark, wh follow the slow regeneration to normal in from ten days on a meat diet, we are fairly certain that blood serum proteins cannot be actively concern transition products of protein metabolism between food proteins and body tissue proteins;

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[1] Kerr, W. J.; Hurwitz, S. H., and Whipple, G. H.: Reg Blood Serum Proteins, I, Influence of Fasting on Cur Regeneration Following Plasma Depletion, Am. J. Physiol. 47 II, Influence of Diet on Curve of Protein Regenera Plasma Depletion, ibid. p. 370; III, Liver Injury Alone; L and Plasma Depletion: the Eck Fistula Combined with tion, ibid. p. 379.

the return to normal would be expected to take ce within twenty-four hours or less.

ince these experiments give no evidence that the proteins may be in any way concerned as interdiary products between food protein and body tissue parenchyma protein, it is logical to inquire anew as the function of the serum proteins. Accumulating indicate that it is independent of the nitrogenous bolism of the body. The blood serum protein exhibits a remarkable stability even under unusual litions of both health and disease. The experital evidence acquired by Kerr, Hurwitz and Whip points to the liver as concerned in maintaining the rmal level, just as this organ has been implicated, d apparently with good reason, in the production of fibrinogen of the blood. If we add that the blood rum proteins probably assist in maintaining a desired cosity of the blood and in preserving its neutrality, remove them from the domain of nutrition into the alm of conjecture. Here lies a *problem* for the ture.

THE FOXHALL FOSSIL HUMAN JAWBONE

In our Correspondence Department this week we blish a letter from J. Reid Moir of Ipswich, Engd, in regard to a fossil human jawbone found at xhall. As will be noticed, the object of Mr. Moir's nmunication to THE JOURNAL is to secure, if possi-, some trace of the jawbone, which Mr. Moir ieves to be in the United States. While not strictly lical, the subject of the antiquity of man, as revealed fossil fragments such as this, is of special interest most physicians. Prof. Frederick Starr of the partment of Anthropology of the University of cago is inclined to believe that this fragment proby is not of the Pliocene period.

he jawbone mentioned in Mr. Moir's letter caused siderable talk a half century ago. It is said to have n found in "coprolite" digging at Foxhall, near wich, Suffolk, in 1855. It came into Dr. Collyer's ds and was shown by him at a meeting of the nological Society at London in 1863. The famous ntists of the day examined it—Owen, Huxley, rchison, Lyell, Busk. It was probably the jawbone a woman well on in years. While admitting that it wed some curious features, none of these authori gave special significance to the piece, and its iquity was clouded. Collyer published an article h illustration in the *Anthropological Review* of 7. His account leaves serious doubt as to the cirstances of its finding; his picture shows that the presents a pronounced chin eminence, a "modern" acter, absent in the old Heidelberg and Neandertypes, though present in Chancelade-Cro-Magnon. skeleton has recently been found, near Ipswich, r chalky boulder clay. Instead of presenting the nderthal type, it is "modern." A long article in the *Journal* of the Royal Anthropological Institute for 1911 discusses the find in detail. Dr. Arthur Keith has made a careful anatomic examination. The individual was about 5 feet 10 inches in height, had a brain of modern form and size, and relatively small jaws and teeth, "and all the features so like the men who live in England today that it seems impossible that a form which lived before the deposition of the chalky boulder-clay could have come down to modern times so little changed." It is this find and others of similar bearing that give present interest to this "coprolite jaw" of Dr. Collyer, for which search is being made. Do these recent finds, and the lost jaw, prove that a "modern type" of man, a *Homo sapiens*, has lived so long? We would expect "missing links" only—"intermediate forms"—so far back in time. To find a "modern type" here is serious. In the course of his discussion, Keith says:

> It will thus be seen that the Ipswich skeleton is not an isolated discovery. It is one of a great number, which to my mind clearly indicates that we have to seek for the evolution of the modern type of man—not in the Pleistocene (i. e., glacial) but *in the Pliocene formations*. With the evidence derived from the discovery of the human remains, the discovery of worked flints[1] must also be taken into account.

Professor Starr states that the three oldest specimens of human remains now recognized by science are those found at Trinil in Java, at (near) Heidelberg in Germany and at Piltdown in England. The Java fragments were described under the name of *Pithecanthropus*, and the type was considered a veritable "missing link." The Heidelberg jaw was unquestionably human, but notable for size, thickness and other characters. The find at Piltdown was the upper part of a skull of interestingly low type. The latest writers—like Osborn and Keith—consider all of these actually "human," but refer them to species different from *Homo sapiens*, to which all existing men belong. All of them show striking brute characters and accord well with what evolution suggests as to ancient types. All are of "glacial" age; Osborn, who is conservative in estimates, refers the Piltdown skull to the third interglacial stage (perhaps 100,000 years ago), the Heidelberg jaw to the second interglacial stage (perhaps 200,000 years ago), and the Trinil fragments to the first interglacial stage (perhaps 475,000 years ago). Osborn estimates the entire glacial period at 525,000 years. Back of it comes the Tertiary Age of the geologist, with the Pliocene as its closing period.

Apart from "eoliths," about which discussion now rages, no relics of human handiwork are recognized as older than the third interglacial stage. The rudest intentionally shaped implements and weapons known come from its gravels and other deposits. The oldest of them are perhaps 125,000 years old. We have no artefacts made by Heidelberg man or *Pithecanthropus*. These creatures may have used natural splinters of flint—"eoliths"—but we do not *know*. In the glacial deposits from the third interglacial stage onward remains of human beings—skullcaps, jawbones, other fragments, even complete skeletons—have been found. At least three types of men are represented during glacial times—Neanderthal (low and perhaps related with Trinil, Heidelberg and Piltdown), Chancelade-Cro-Magnon (much higher, with headform and body structure quite comparable with *Homo sapiens* and no doubt related to him) and Grimaldi (also of *Homo sapiens*, but distinctly "negroid," African in character). All three are "glacial," the Cro-Magnon and Grimaldi from relatively late glacial deposits, the Neanderthal from earlier. Still, the Neanderthal certainly lasted on until these more modern types had made their appearance.

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[1] These are claimed by their finder, the same Mr. Moir, as Pliocene; they are probably "eoliths," not intentionally shaped.

But—to return to the present—let it be remembered that the Foxhall human jaw bone is possibly somewhere in this country and that the immediate object is to find it.

THE FOOD CRISIS IN GERMANY

When Germany began to realize her isolation as the result of the blockade, she loudly proclaimed the impossibility of success in the direction of an "Aushungerungsplan"—a scheme to deprive her of indispensable food supplies. There is no occasion at present to assume that there was any pronounced impairment of health on the part of the population of the Central Empires because of food shortage in the earlier months of the great struggle. Accumulated resources were still available, and neighboring neutrals were willing and able to exchange food products for money or commodities. As the months of fighting passed into years, however, the need of strict rationing of the population became an open secret. Lack of fats was freely admitted. It was openly attested that thousands of civilians were declining in body weight; yet this was ostensibly hailed as a symptom favorable rather than otherwise to well being. The doctrine of "physiologic economy in nutrition" was preached with seemingly timely emphasis on its alleged advantages to health.

A prolonged period of enforced privation has given an exceptional opportunity to test the validity of some of the prophesies, and to learn what rations kept scant, far beyond the expectation of those who participated in them, really mean for great masses of people. During our own days of conservation, the possible distinction between prudent living and reduced food supply was not always kept clear. Overweight may well represent an unfavorable life insurance risk; yet this fact does not place the stamp of wisdom on underfeeding.

Among the reputed benefits besides the reduction of undesirable corpulence ascribed to the strict rationing of the German population were reports of reduction in gastro-intestinal disorders owing to more frugal living. The decrease in meat consumption was said to have caused gout to disappear almost completely. Such consequences might well be hailed as personal advantages. However, the veil of strict censorship behind which the internal affairs of Germany have long been hidden is now being lifted. Professor Rubner of Berlin, who has long been a student of the nutrition of the people, has recently pictured the state of affairs as he saw them.[1] He has proclaimed that the dangers threatening Germany were at first utterly underestimated. The awakening came with the never-ending restrictions in the allowance of food, which grew scantier as time progressed until every one began to realize through his own deprivation what the blockade really signified. The securing of provisions from friendly or conquered states proved, says Rubner, to be like a drop of water on a hot stone. The turning point in nutrition came in the middle of 1916. From that time on, the people were deprived of the important foods, or could secure at most only small quantities. Meat, eggs, milk and butter practically disappeared, with the result that the guaranteed portion for the adult was ultimately reduced to one half or even one third of the former allowance. The year 1918 brought no halt along the road to decline; on the contrary, it necessitated a further restriction of meat, and renewed decrease in the milk allowance for children and invalids.

Current Comment

TESTING A PHYSICIAN'S QUALIFICATIONS FOR PRACTICE

The scheme generally adopted in this country to ascertain whether a physician is properly qualified to practice medicine is duplex in character. It requires, first, that the applicant submit evidence of graduation from a "reputable" or "recognized" medical school; and, second, that he pass a state examination. The reputability of a medical school may be judged by an investigation of its admission requirements; the manner in which these requirements are enforced; the qualifications of its teachers; the character of the teaching methods and of the facilities for teaching—in brief, the equipment and facilities of the college for furnishing a training in accordance with present-day medical knowledge. Graduation from a recognized or reputable medical school is evidence that the applicant's medical training is complete, and implies that the faculty of the medical school considers him qualified to practice medicine. In effect, therefore, the examination is a supplementary test of the candidate's fitness to practice, and is not of vital importance in states in which only graduates of high grade medical schools are examined.

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[1] The facts here reported are quoted from the Berliner klinische Wochenschrift, Jan. 6, 1919, p. 2.

But in those states in which this is not the case, the examination becomes of extreme importance, and should be made especially thorough, since here it is the sole means of deciding whether or not the candidate is qualified to treat the sick.

REGISTERING OSTEOPATHS AS PHYSICIANS AND SURGEONS

As shown elsewhere this week, the licensing boards of three states not only have admitted graduates of osteopathic colleges to the examinations for physicians and surgeons, but also have licensed a decidedly generous proportion of them. It is interesting to note that in these three states osteopaths have been appointed as members of the medical licensing boards, California and Texas each having two such members and Colorado one. There is no objection to admitting osteopaths to the physicians and surgeons' examination if the test of their qualifications is fully equal to that for physicians and surgeons. But such is not the case. While they may be examined, they are not required to be graduates of any medical school, much less one that is recognized. Neither is the examination of such character as to test their knowledge of and ability to use scientific methods of diagnosis, much less of the prevention and treatment of disease. It is well known that osteopathic colleges do not enforce as high requirements for admission, nor possess as well equipped laboratories, nor have teachers as efficiently trained in scientific medicine as even Class C medical schools, much less those in Classes B and A. As a matter of fact, two of the states, Colorado and Texas, refuse to recognize Class C medical schools, but do admit graduates of osteopathic schools to the examination for physicians. To ascertain the competence of such candidates to practice as physicians, the duplex method of licensure referred to in the preceding comment should be adhered to. If osteopaths wish to limit themselves to their peculiar and restrictive form of treatment, let them appear before the public in their true light; if they want to appear before the public as physicians and surgeons and to assume all the responsibilities as such, let them be measured by the same standards and submit to the same tests.

LOW TYPHOID RATE IN RICHMOND

We learn from the Richmond authorities that, owing to an error in transcription in the health office in that city, an incorrect figure for the number of deaths was sent The Journal, so that the 1918 rate for Richmond should be 7.5 instead of the high figure given in the annual report for 1918. We make this correction with the greater pleasure since in the past few years Richmond has made great efforts to reduce its typhoid rate, and has succeeded better than any other Southern city. This is the second successive year in which the rate has remained remarkably low, and we congratulate that city on its admirable record. We regret the error in the annual summary, but it is plainly impossible for The Journal to go back of the figures sent it and make a special investigation in each case. Those conversant with the local situation in certain cities are sometimes critical of the figures presented in The Journal. We have, for instance, received a number of intimations that the very low typhoid rate reported for one of our great cities in the past three years does not quite reflect true conditions in that city. It is not believed, however, that it is the province of The Journal to go behind the figures sent it by official agencies. For one thing, the necessity for promptness in publication would forbid any attempt at special investigation in particular cases. None the less, we regret that Richmond, a city with such an excellent typhoid record, should have suffered by a clerical error, although it was none of The Journal's making. We gladly repeat our statement about Richmond in the sixth annual report (for 1917): "Typhoid reduction in the past ten years reflects great credit on the health administration."

THE WALLINGFORD OF MUS MUSCULUS

"One thousand mice in a year should return $25,000," says the Laboratory Supply Company of Philadelphia. A further reading of the pamphlet in which this statement occurs discloses that an outfit consisting of three female mice, one male, and a hutch completely equipped, together with a book of instructions, can be had from the Laboratory Supply Company—for $10. This outfit should yield, by the laws of nature, fifteen litters a year, or 300 new mice, worth $75. As one of the testimonials in the booklet puts it: "Mice are certainly some breeders. Can hardly stop them after they get started." Allowing $5 for expense, since mice eat very little, we have $60 profit, or 600 per cent., on the original $10 investment. This attractive proposition is exceeded only by the cat and mouse farm of proverbial fame. In introducing the general subject the Laboratory Supply Company informs us that:

> Because of the extreme shortage of white mice thousands of men, women and children, as well as our soldiers, died during the last year. Many of these deaths, in fact a large percentage of them, could have been averted had mice been available.

Then we read in a letter accompanying the booklet the following important scientific statement:

> Spanish influenza antitoxine would have greatly retarded the spread of that terrible disease and would have saved thousands of lives, but enough small animals were not available to make the antitoxine in sufficiently large quantities. In making the different antitoxines some small animals are absolutely needed to prepare, test and standardize the antitoxine. No antitoxine can be used before it is properly tested and standardized. Guinea Pigs are used to test and standardize the different fever antitoxines such as scarlet, typhoid and diphtheria, while White Mice are used for pneumonia and influenza antitoxines.

The pamphlet and letter from which the quotations are taken evidently have been received by many physicians, since many were forwarded to The Journal. Physicians do not appear to have fallen for this investment to any great extent. Of course, to any one familiar with laboratory methods or with modern medical practice, the absurdity of the claims is apparent. White mice are used only to a limited extent in immunologic, experimental work, and beyond this primarily for typing pneumococci and streptococci. Furthermore, there exist methods for typing pneumococci without the use of laboratory animals. The statement of the Laboratory Supply Company that the demand for white mice is enormous and that "there are enormous profits for each of those who respond to this appeal" are not in accord with the facts. Their offer to accept war bonds and war savings stamps in return for breeding outfits is on a par with similar offers by promoters of dubious speculations.

WATER-BORNE TYPHOID STILL OCCURS

The recent water-borne typhoid outbreak in Herkimer, N. Y.,[1] affords another illustration of the importance of controlling and safeguarding water purification by chlorination. It cannot be emphasized too often, first, that some waters are much more difficult than others to treat by the chlorination process, and secondly, that it is not safe to entrust the supervision of any water chlorination to unskilled subordinates. The hand of a responsible expert must be kept on the operation all the time. Jordan and Irons[2] have shown in their report on a typhoid outbreak at Quincy, Ill., how well-intentioned deviations in the amount of chlorin applied might result disastrously. There is other evidence to the same effect, notably in an outbreak in Milwaukee in 1916. As regards the Herkimer epidemic mentioned above, we read that an emergency supply was resorted to in time of water scarcity, and that "while an attempt was made to sterilize this emergency supply by means of liquid chlorin, the arrangement of the apparatus was such that the chlorin was not properly applied." As a result of this and further omission of and interference with the chlorination process, contaminated creek water gave rise to about 155 cases of typhoid. It must be repeated that water purification is not an automatic affair and does not function without guidance. Especially must highly contaminated water be very cautiously dealt with if dependence is placed on chlorination.

THE GOLDENROD AND HAY-FEVER

With the recurrence of the hay-fever seasons, physicians will be interrogated as usual regarding the "dangers of flowers" and other alleged noxious factors popularly supposed either to contribute to the distress of hay-fever victims or to threaten the unattacked. The knowledge that plants play a decisive part in the etiology of the disease has become widespread. Nevertheless a wider appreciation of the origin of the pollens for which a relationship to hay-fever seems to be established ought to be encouraged. Scheppegrell[3] has formulated the following characteristics of hay-fever plants: They are wind pollinated, are very numerous, the flowers are inconspicuous, without bright color or scent, and the pollen is formed in great quantities. In the spring season now at hand the chief offenders are the pollens of grasses in all sections. The fall hay-fever in the Northern, Eastern and Southern states[4] is for the most part attributed to the pollens of the ragweeds (*Ambrosiaceae*), these being replaced in the Pacific and Rocky Mountain states by the wormwoods (artemisias). Scheppegrell[5] seems to have proved an alibi for goldenrod. Its flowers are insect pollinated, have bright colors and scent, and the pollen is not formed in large quantities. In fact, according to Scheppegrell, it is never found on atmospheric pollen plates. Furthermore, goldenrod continues to bloom for some time after the close of the hay-fever season. It will be hard to convince many victims of the disease that Scheppegrell is correct in his views regarding the goldenrod; but if these observations are confirmed, a beautiful flower will be saved from undeserved disrepute.

Association News

THE ATLANTIC CITY SESSION

Tournament to Be Held by the American Medical Golfing Association

The American Medical Golfing Association will hold its 1919 Tournament, June 9, on the links of the Atlantic City Country Club. Luncheon will be served at the club house from 12 to 2, and the annual golf dinner and meeting of the association will be held that evening. The tournament will be conducted in a manner similar to that followed last year. Section captains will be appointed and will be expected to get out their respective teams. Entries will be made in the order of their receipt, and each team will be closed when the capacity of the course (twenty-five foursomes) is reached. They will be closed at the office of the secretary, under any conditions, May 30.

Fellows desiring to be entered will appreciate how important it is for the Atlantic City Committee on Arrangements to know as early as possible the number that will participate. Accordingly, Fellows are urged to be entered and to inform their golfing confrères of this tournament, that they also may submit applications as promptly as possible.

Any Fellow of the American Medical Association becomes automatically a fellow of this association on acceptance of its by-laws and the payment of the enrolment fee ($2). This enrolment fee is for the general funds of the association and may be paid at any time.

Those desiring further information should address Dr. Will Walter, Secretary-Treasurer, 1414 Chicago Avenue, Evanston, Ill.

Ample Hotel Accommodations Assured

The Local Committee on Arrangements assures those who plan to attend the coming annual session — the Victory Meeting — of the Association, to be held in Atlantic City next June, that there are ample and excellent hotel facilities at reasonable rates available for all. The chairman of the Subcommittee on Hotels, Dr. David B. Allman, or the chairman of the Central Local Co on Arrangements, Dr. Emery Marvel, will gla llows in communication with hotel managers. located on the avenues indicated, off the American plan at rates for a sing

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[1] Horton, Theodore: Water-Borne Typhoid Fever Outbreak in Herkimer, N. Y., Pub. Health Rep. **34**: 597 (March 28) 1919.

[2] Jordan, E. O., and Irons, E. E.: J. Infect. Dis. **13**: 16 (July) 1913.

[3] Scheppegrell, W.: Hay-Fever and Its Prevention, Pub. Health Rep. **31**: 1907 (July 21) 1916.

[4] Scheppegrell, W. Its J. A. M. A. **66**: 707 (C the

[5] Scheppegrell, W.: **49**: 284, 1919.

$2 to $4 a day and upward, in accordance with the accommodations provided. The rates offered at any of these hotels may be obtained by addressing the hotel at Atlantic City.

Oriental Avenue: Touraine, Glenside.
New Jersey Avenue: Pierrepont.
St. Charles Place: Loraine.
Virginia Avenue; Blackstone, Berkshire Inn, Whittier, New Florence, Victor Hall, Majestic, Grand Atlantic, Calvert, Jackson, Bothwell, Wiltshire, Sothern, Morton, Raymond, Absecon, Shoreham, Albemarle.
Pennsylvania Avenue: Holmhurst, Upton, St. Clare.
North Carolina Avenue: Colonial.
South Carolina Avenue: DeLancey-Lakewood, Silverside, Radnor, Watkins, Mullica, Trexler, Princess, Iroquois.
Ocean Avenue: Bon Air, Kingston.
Tennessee Avenue: Elberon, Continental, Howard House, Greater Pittsburgh, Kenwood, Kenderton.
St. James Place: Flanders, Elwood, Devonshire, Thompson.
New York Avenue: Netherlands, Belleville, Chester Inn.
Kentucky Avenue: New Clarion, De Ville, Monticello, Wellsboro, Westminster, Silverton, Richmond, Carnix.
Illinois Avenue: Craig Hall.
Park Place: Glaslyn-Chatham, Cheltenham-Revere, Runnymede.
Michigan Avenue: Pennhurst, Arlington, Edison.
Arkansas Avenue: Emmett.
Missouri Avenue: Worthington.
Pacific Avenue: Arondale, Channel.
Arctic Avenue: Wright's (colored), Ridley's (colored).

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending April 11, the Medical Corps contained 19,008 officers, a decrease of 310 from the previous week. The Medical Reserve Corps contained 1,555 officers. The total number of medical officers discharged since the beginning of the war is 14,533.

Distinguished Service Cross to Gen. T. H. J. C. Goodwin

The commander in chief of the American Expeditionary Forces announces that pursuant to authority granted by cable A-2830 he has awarded the Distinguished Service Cross to Lieut.-Gen. Sir T. H. J. C. Goodwin, G.C.B., C.M.G., director-general, army medical service. It will be remembered that General Goodwin was sent to this country as liaison officer, following the entrance of this country into the war, and spoke before many medical organizations.

The Recall Appears

The first issue of the *Fort Sheridan Recall*, a newspaper issued for the benefit of the wounded at General Hospitals Nos. 28, Fort Sheridan, and 32, Chicago, appeared, April 9. The new journal is similar to those already in operation in Washington, New York and Detroit, and contains news of the various hospitals in the Central Department. A printing plant is being installed at Fort Sheridan so that patients in U. S. General Hospital No. 28 may learn the printing and allied trades.

Courses for Student Nurses at Civilian Hospitals

Arrangements are being made by the Surgeon-General of the Army with civilian hospitals for courses of instruction for student nurses. To be eligible for the diploma of the Army School of Nursing, students must complete the courses satisfactorily in both classes of hospitals. The arrangements with the civilian hospital training schools provide that the students in the Army School of Nursing shall be given board, lodging, laundry and such allowance, if any, as is given their own students. Some schools do not provide an allowance. During the period of their affiliation the monthly allowance of $15 from the Army will be discontinued.

Weekly Bulletin, A. E. F.

(*March 17, 1919*)

HIGH DIPHTHERIA INCIDENCE AND DEATH RATE

This number of the *Bulletin* is devoted largely to two epidemics of diphtheria occurring in Base Section 2 and in Base Hospital No. 54. In Base Section 2 there were 166 cases. In summarizing conditions, the chief surgeon states that the late diagnosis due to indifferent examination and lack of pains to obtain confirmatory cultures, failure to give antitoxin promptly on clinical diagnosis and have the diagnosis confirmed later, insufficient initial dose and unsuitable use of small divided doses seem to have been chiefly responsible for the deaths. It is stated that of 96 cases in which full reports were made, 56 developed so long after admission to hospital that it is probable the infection was acquired in the hospital.

WEEKLY REVIEW

The venereal disease rate has dropped to 30.97 from 36.69, due to substantial reductions in the rates in all sections and districts, except Base Sections 4 and 6 and in the First and Third Armies, where increases were recorded. Apparently this reduction is largely due to decreased exposures, since the percentage of failures to take prophylaxis is higher than it was a week ago.

There have been reductions during the past week in all communicable diseases, except paratyphoid fever. One case of smallpox was recorded in the Second Army. The total number of communicable diseases reported during the week is less than at any time since the signing of the armistice.

Interallied Congress of Aviation Medicine

Rome, Feb. 15-19, 1919

An interallied congress of aviation medicine convened in Rome, February 15 to 19, inclusive. The various countries concerned were thus represented:

Great Britain: Lieut.-Col. Martin Flack, R. A. F. M. C.; Dr. Henry Head; Lieut.-Col. Georges Dreyer, R. A. M. C.; Lieut.-Col. Birley, R. A. F. M. C. (absent through illness); Capt. D. Ranken, R. A. F. M. C. (interpreter).

France: Capt. Georges Guillain; Capt. J. LeMaire; Lieut. L. Ambard; Lieut. D. Garsaux; Lieut. R. Gaumont, artillery observer, secretary.

Italy: Major-Gen. R. Bressanin; Lieut.-Col. C. Gradenigo; Lieut.-Col. Arturo Cascarino; Major Amedo Herlitzka; Major Alberto Agazzotti; Prof. Gino Galeotti.

Belgium: Capt. P. Voncken, Service de santé.

United States: Col. Thomas R. Boggs, M. C.; Col. W. H. Wilmer, M. C. (absent through illness); Lieut.-Col. L. G. Rowntree, M.C.

Captain Samarini, American Red Cross, acted as interpreter. Professor Gradenigo of Italy was elected president of the congress.

SUBJECTS DISCUSSED

The program was arranged by the Italian delegation. The following subjects were discussed:

1. Considerations concerning the admission of candidates as pilots: (*a*) The necessity of the psychophysiologic examination and its organization. Great importance was attached to the question of civil and commercial aviation. In order to secure pilots physically and temperamentally fit it was deemed advisable to have psychophysiologic examinations for all candidates for aviation, military or civil. Perfect somatic health should be insisted on, and if possible perfect sensory functions. Absolute physical fitness should be demanded of all civil pilots, while for military aviation each country must determine the limits for admission according to its necessity. It was generally agreed that simple psychomotor tests alone are of little consequence, but that discrimination tests are of greater value in determining aptitude for flying. Reaction time tests alone should not, however, constitute the basis for rejection, but they should constitute a part of the general examination of the candidate. (*b*) Indispensable tests at the present moment of our knowledge of the physiology of aviation. This and the following subject were discussed at length; the more important conclusions are presented later. (*c*) Limits of fitness and causes for exclusion. (*d*) The necessity for continuing in the proper institutes the studies and researches in physiology and hygiene of aviation. (*e*) The need of special training in psychologic institutes of medical officers attached to aviation. The last two subjects, *d* and *e*, were unanimously granted.

2. Duration of fitness: (*a*) Necessity of periodic examination of pilot. This was unanimously admitted. (*b*) Necessity of periods of rest. The necessity was admitted by all. It was deemed advisable to leave the question of time duration to the physician in charge of the fliers rather than make it a matter of routine as suggested by the Italians, who advocated one month's rest after each 100 hours of flying. (*c*) The special trouble of aviators.

3. Methods for the protection of the pilots: (*a*) Protection against cold and wind. Those with experience felt that

electrically heated clothing had proved a failure. Fur lined clothing has proved much more popular with the pilots themselves. Face greases were in general use in all the countries and were considered of unquestionable value, but further experimentation is necessary in regard to composition. Belts and padding for the cockpit were also discussed. (*b*) Means of controlling the effects of low barometric pressure. It was deemed essential to equip all machines with an oxygen apparatus preferably automatic in character. No decison was reached as to whether carbon dioxid is nesessary in addition. (*c*) General hygienic considerations.

4. Medical organization and medicolegal responsibility.
5. Representation to the governments concerned.

SPECIAL SESSION

A special session was held on the day following the official congress for consideration of some of the problems fundamentally important in aviation medicine, such as circulation, respiration, vision and equilibrium.

Circulation: In order to obtain comparable results in various countries, uniformity in blood pressure apparatus and in technic regarding posture and type of exercise was advocated in the study of the effects of posture and exercise on the pulse and blood pressure.

Respiration: Studies of vital capacity were considered by the British of definite value, especially in relation to fatigue. It was suggested that hereafter it be not considered alone but in relation to body surface. Colonel Dreyer asserted that vital capacity is a function of a body surface rather than that of body weight, and submitted a practical formula in this connection. Flack's test (a support of a 40 mm. column of mercury) was looked on as an excellent index of physical fitness and was considered of special value in revealing flying fatigue.

Vision: The desirability of perfect vision is unanimously admitted. America alone was in a position to demand perfect vision without correction by glasses. It was left to each country to set its limits as determined by its needs and the supply of men available. The importance of muscle balance and of color vision was emphasized. A general feeling existed that there was need of further study of standards in relation to night vision.

Equilibrium: While it was agreed that vestibular function has some bearing on aptitute for flying, it was felt that its importance had been overemphasized. It was the opinion of the congress that much further study was necessary before limits could be placed on the various Bárány chair tests.

RESOLUTIONS

Resolutions were passed that:

1. Special examinations are necessary for aviation. The basis of this should be a thorough general physical examination. Perfect somatic health is essential and in addition, if possible, perfect sensory functions.
2. Research institutions for medical, physiologic, psychologic and hygienic investigations are essential. Such institutions should be maintained in each country.
3. It is desirable that such institutes should be uniformily known as aviation medicophysiologic institutes.
4. Uniformity is desirable in relation to standards in medical, physiologic, psychologic and hygienic examinations as carried on in various countries.
5. Special training is necessary for medical officers designated for service in aviation, and provision for their training should be made in the aviation medicophysiologic institutes.
6. All aviation medical officers attached to field work should be required to fly as passengers, and it is desirable that medical officers engaged in research problems of aviation should also fly as passengers in order that they may better grasp the flier's point of view of the problems involved.
7. Special hospitals should be established or wards under proper control should be set aside for military fliers in existing hospitals, and such hospitals should be supplied with properly equipped laboratories for the studies in relation to aviation medicine.
8. It is essential to equip all machines with an apparatus, preferably automatic in character, for the administration of oxygen and carbon dioxid in order to overcome the effects of altitude.
9. A permanent organization should exist for the prosecution of work in relation to aviation medicine and for the interchange of ideas and information relating to it.

OFFICERS

A permanent organization was created and designated as the Société scientifique d'étude médicale aeronautique. The following officers were elected: president, Dr. Georges Guillain, Paris; secretary, Dr. Alberto Agazzotti, Modena, Italy; treasurer, M. Raymond Gaumont, Paris. Executive committee: Dr. Giuseppe Gradenigo for Italy; Dr. Henry Head for Great Britain; Dr. Thomas R. Boggs for the United States; Dr. Jules Voncken for Belgium. Rome was selected as the home of the society, and Oxford, England, for the next annual meeting in 1820.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L. signifies lieutenant; C, captain; M, major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Attalla—Stewart, G. E. (L.)
Bellamy—Hale, R. E. (C.)
Belleville—Skinner, P. B. (C.)
Birmingham—Bean, J. R. (L.)
    Kelley, A. L. (L.)
    Stiles, M. P. (L.)
    Woods, L. C. (C.)
Brewton—Hagood, M. H. (M.)
Center—Sewell, W. A. (C.)
Demopolis—Savage, T. C. (L.)
Dozier—Taylor, T. W. (C.)
Evergreen—Cammack, K. R. (L.)
Gadsden—Bass, H. W. (C.)
    Morgan, J. O. (L.)
Marion—Swann, E. (C.)
Mobile—Cole, H. P. (M.)
    Reaves, J. U. (L.)
    Wilson, J. M. (L.)
Sylacauga—Porch, R. D. (L.)
Tuscaloosa—Fitts, A. (C.)

ARIZONA

Fort Defiance—Monk, J. A. (L.)
Globe—Wales, J. L. (C.)
Holbrook—Bazell, J. W. (L.)
Phoenix—Hughes, C. I. (L.)
Winslow—Bazell, R. G. (C.)

ARKANSAS

Cotton Plant—Brown, E. B. (L.)
DeQueen—Hopkins, R. L. (L.)
Hot Springs—Tribble, A. H. (C.)
    Wade, H. K. (L.)
Little Rock—Gann, D., Jr. (C.)
    Wayne, J. R., Jr. (M.)
McCrory—Fraser, R. L. (L.)
Pine Bluff—Strauss, A. W. (L.)
Searcy—Harrison, A. G. (L.)

CALIFORNIA

Azuza—Hill, J. E. (C.)
Camptonville—Lord, F. K. (L.)
Chico—Enloe, N. T. (C.)
Ferndale—Hoskins, G. (L.)
Huntington Park—Turner, J. H. (C.)
Lankershim—Shirey, C. W. (L.)
Lincoln—Hyde, O. C. (L.)
    McCullough, F. E. (C.)
Lindsay—Tourtillott, W. W. (L.)
Lodi—Gardner, J. M. (L.)
Long Beach—Buell, A. W. (L.)
Los Angeles—Ballard, C. (L.)
    Bancroft, I. R. (C.)
    Biggs, E. L. (C.)
    Bonoff, K. M. (L.)
    Bowman, W. B. (M.)
    Campbell, M. N. (C.)
    Clinton, E. M. (L.)
    Collins, T. S. (C.)
    Daniel, W. H. (L.)
    Dieterle, K. L. (L.)
    Frees, B. M. (L.)
    Gage, C. E. (L.)
    Hanford, F. W. (C.)
    Hill, R. B. (L.)
    Holleran, J. F. (L.)
    Jeffs, M. D. W. (L.)
    Mace, L. R. (L.)
    Porter, G. S. (L.)
    Rand, C. W., (L.)
    Roth, L. J. (C.)
    Swim, W. A. (L.)
    Tebbetts, J. H. (L.)
    Thornton, J. (L.)
Mill Valley—Beard, J. L. (L.)
Modesto—Bissell, N. C. (C.)
Oakland—Clark, E. M. (L.)
    Shade, M. A. (L.)
Ocean Park—Sands, R. A. (L.)
Palo Alto—Silliman, J. C. (C.)
Pasadena—Fitch, S. J. (L.)
    Luckie, J. B. (L.)
    Mattison, E. G. (L.)
Petaluma—Peoples, S. Z. (L.)
Richmond—Caesar, W. J. (L.)
San Diego—Bobbitt, A. N. (C.)
San Francisco — Boge, H. G. C. (L.)
    Burnham, M. P. (C.)
    Carlton, A. C. (M.)
    Edwards, S. R. (L.)
    Guntz, A. V. (L.)
    Hubbell, G. R. (M.)
    Leaverton, C. C. (L.)
    Long, M. H. (L.)
    Mordoff, C. E. (M.)
    Pratt, G. D. (L.)
    Purcell, G. W. (L.)
    Stone, E. E. (C.)
    Sturr, R. P. (L.)
San Pedro—Moore, W. D. (L.)
Santa Ana—McAuley, J. (L.)
Santa Barbara — Sidebotham H. (M.)
Santa Monica — Berkley, H. K. (C.)
Santa Rosa—Shaw, J. H. (C.)
Sebastopol—Wilson, L. J. (C.)
Sherman—Perry, J. R. (L.)
Sonoma—Thomson, A. M. (L.)
South Pasadena — Browning, C. C. (L.)
Whittier—Smith, W. E. (C.)

COLORADO

Boulder—Swartz, F. G. (L.)
Colorado Springs—Allen, L. R. (C.)
    Brown, J. H. (M.)
    McKinnie, L. H. (M.)
    Peters, A. H. (L.)
Denver—Chase, J. S., Jr. (L.)
    Crosby, L. G. (C.)
    Jayne, W. A. (L. C.)
    Lewis, G. B. (L.)
    Monaghan, D. G. (C.)
    Pershing, C. L. (M.)
    Wilcox, H. W. (C.)
Frederick—Leyda, P. L. (C.)
Pueblo—Wolf, J. G. (C.)

CONNECTICUT

Ansonia—MacNish, J. F. (L.)
Bridgeport—Smith, S. R. (L.)
Danbury—English, R. M. (M.)
Hampton—Marsh, A. D. (L.)
Hartford—Ashton, L. O. (L.)
Middletown—Nolan, D. A. (C.)
New Haven—Russo, J. D. (L.)
    Slemons, J. M. (M.)
    Weil, A. (C.)
Portland—Chedel, C. B. (C.)
South Norwalk — Perdue, R. E. (M.)
Stratford — Hennessey, E. H. J. (L.)
West Haven—Rogers, P. H. (L.)

DISTRICT OF COLUMBIA

Washington—Hyde, C. W. (M.)
    Kane, H. F. (C.)
    Lee, E. H. (C.)
    Lehr, L. C. (M.)
    Roche, A. F. (L.)
    Sullivan, R. Y. (M.)

FLORIDA

Chattahoochee—Smith, H. M. (L.)
Jacksonville—Croft, T. G. (L.)
    Kennon, C. L. (L.)
    Taylor, H. M. (C.)
Ocala—Ponder, J. M. (L.)
Pensacola—Bickeystaff, J. H. (L.)
Sarasota—Schultz, F. W. (L.)
Starke—Freeman, A. H. (C.)
Tallahassee—Johnston, J. K. (L.)
    Kendrick, O. G. (L.)

GEORGIA

Atlanta—Kinard, J. O. (L.)
    McAllister, J. A. (L.)
    Nash, H. E. (L.)
Augusta—Gherken, H. S. (L.)
Columbus—Christian, P. H. (L.)
Darien—Woods [illegible])
Frolona—Man[illegible]

Greenville—Norman, F. P. (L.)
La Grange—Hadaway, W. H. (L.)
Louisville—Rhodes, R. L. (L.)
Macon—Harrold, C. C. (M.)
Savannah—Fuquay, G. L. (L.)
 Kirkland, N. L. (L.)
Summit—Riner, C. R. (C.)
Waycross—Bradley, D. M. (L.)
 Witmer, C. A. (L.)

IDAHO

[illegible]
[illegible] (L.)
[illegible], R. T. (L.)
Weiser—Conant, C. C. (M.)

ILLINOIS

Batchtown—Wood, H. (C.)
Belleville—Otrich, G. C. (C.)
Benton—Austin, E. (L.)
Blue Island—Finkel, M. (L.)
Castleton—Neill, C. W. (L.)
Chicago—Barrett, C. W. (M.)
 Bernart, W. F. (C.)
 Blatt, M. L. (M.)
 Boot, G. W. (C.)
 Capps, J. A. (L. C.)
 Cary, E. (C.)
 Chilcott, I. H. (L.)
 Curtis, A. H. (C.)
 Di Cosola, F. S. (L.)
 Epstein, S. S. (L.)
 Fillis, B. E. (L.)
 Fisher, H. E. (C.)
 Fleming, S. C. (L.)
 Foley, T. P. (M.)
 Grant, J. F. (L.)
 Hanmore, F. C. (L.)
 Harvey, B. C. H. (M.)
 Holden, A. A. (L.)
 Johannesson, C. J. (L.)
 Lapin, C. P. (L.)
 Lavin, J. M. (M.)
 Levett, J. (L.)
 Lewis, H. F. (M.)
 Lyons, A. J. (M.)
 Loyns, E. W. (L.)
 McClellan, J. H. (M.)
 Moe, C. C. (L.)
 Moeller, F. W. (M.)
 Piper, L. P. (L.)
 Plummer, S. C. (M.)
 Rennie, T. W. (L.)
 Roberts, S. M. (L.)
 Rochester, A. S. (L.)
 Schott, O. J. (L.)
 Stearns, R. W. (L.)
 Strauss, J. F. (C.)
 Sullivan, S. (L.)
 Thompson, W. M. (M.)
 Tint, L. J. (L.)
 [illegible]
 [illegible])
Chic[illegible] R. V. (L.)
Cutler—Woofter, J. V. (L.)
Dawson—Mayes, E. G. (L.)
Easton—Tomlin, R. R. (L.)
East St. Louis—Foulon, I. L. (L.)
Effingham—Henry, S. F. (C.)
Elgin—Fell, E. W. (M.)
 Schmidt, H. G. G. (C.)
 West, H. H. (C.)
Farmersville—Hayes, K. L. (L.)
Findlay—Snapp, C. F. (L.)
Gillespie—Vogt, F. C. (C.)
Grant Park—Nielsen, C. H. (L.)
La Salle—Woods, R. H. (L.)
Le Roy—Haig, G. F. (L.)
Littleton—Littlefield, H. A. (L.)
Madison—Hamm, M. (L.)
Magnolia—Simmons, W. A. (L.)
Manteno—Phipps, O. A. (C.)
Melvin—Boshell, H. N. (C.)
[illegible] L.)
[illegible] (L.)
[illegible], H. (C.)
[illegible] C.)
[illegible] C. (C.)
[illegible] (C.)
[illegible] (L.)
 Sprenger, A. (L.)
Quincy—Zimmerman, E. (L.)
Red Bud—Riess, J. T. (L.)
Rockford—Lundholm, J. S. (L.)
Serena—Mosher, B. D. (C.)
Shelbyville—Monroe, H. E. (C.)
Springfield—Morrison, H. T., Jr. (C.)
Strawn—Boies, H. M. (L.)
Williamsville—Haskell, C. D. (L.)
Wyoming—Henson, J. G. (L.)

INDIANA

Anderson—Gante, H. W. (L.)
Auburn—Geisinger, L. N. (L.)
Bicknell—Ashley, C. W. (C.)
Bloomington — Startzman, C. K. (C.)
Boonville—Robinson, W. P. (L.)
Columbus—Graham, P. C. (L.)
Crawfordsville—Sigmond, H. W. (C.)
 Williams, G. T. (C.)
Evansville — Magenheimer, E. F. (L.)
Fort Wayne—Blosser, H. V. (L.)
 Eberly, K. C. (C.)
 Rice, W. B. (L.)
French Lick—Rogers, L. (C.)
Gary—King, E. P. (L.)
[illegible] A. D. (C.)
[illegible] C. A. (L.)
[illegible] G. (L.)
Indianapolis—Graham, A. B. (M.)
 Humes, C. D. (M.)
 Page, L. (M.)
Jeffersonville—Reeder, H. H. (C.)
Lafayette—Hannell, R. V. (L.)
 Van Reed, E. (L.)
Lanesville—Teaford, B. J. (L.)
Ligonier—Hursey, V. G. (L.)
Milan—Whitlatch, I. A. (C.)
Mishawaka—Wyland, B. J. (L.)
New Augusta—Elfers, C. R. (L.)
Owensville—Gibson, J. P. (L.)
Peru—Lynch, O. R. (C.)
Princeton—Gudgel, H. B. (L.)
Salem—Huckelberry, I. E. (L.)
Seelyville — Carmichael, C. S. (L.)
St. Bernice—Green, S. I. (L.)
Tell City—James, N. A. (L.)
Terre Haute—Miller, D. T. (L.)
West Baden—Boyd, C. E. (L.)
Winamac—Collins, L. P. (L.)

IOWA

Belmond—Steele, G. H. (C.)
Brighton—McGuire, R. A. (C.)
Burlington—Woodbury, E. I. (C.)
Clearfield—McCall, H. E. (C.)
Clinton—Reynolds, H. B. (L. C.)
 Weih, E. P. (L.)
Des Moines—Meredith, L. K. (L.)
 Tyrrell, J. W. (L.)
Farmington—Coffin, L. A. (L.)
Gilmore City—Herrick, R. C. (L.)
Hornick—Rentz, C. B. (L.)
Lake Mills—Kaasa, L. J. (L.)
Manson—Mullarky, H. (C.)
Ottumwa—Mills, F. W. (L.)
Sioux City—Cheney, L. D. (L.)
 Sawyer, P. E. (M.)
Swan—Hooper, L. E. (L.)
Webster City—Drake, F. J. (L.)
Westside—Patterson, C. L. (C.)

KANSAS

Americus—Edmiston, R. H. (L.)
Benton—Lightner, O. N. (L.)
Buckley—Scott, A. B. (L.)
Ellsworth—Hoffman, R. L. (C.)
Emporia—Corbett, O. J. (C.)
 Williams, J. O. (L.)
Girard—Smith, D. C. (L.)
Independence—Alford, J. S. (C.)
Kansas City—Bantleon, V. H. (C.)
 Lind, A. J. (C.)
 Rhodes, W. L. (L.)
Leavenworth—Langworthy, J. H. (M.)
[illegible] O. (L.)
[illegible] M.)
[illegible], G. W. (L.)
 Maggard, D. I. (C.)
 Phares, W. A. (M.)
 Ross, C. E. (C.)

KENTUCKY

Bowling Green—Stone, E. W. (L.)
Buechel—Dyer, G. L. (L.)
Cecilia—Nusz, H. R. (C.)
Covington—Ryan, J. A. (C.)
Dry Fork—Young, J. S. (L.)
Lexington—Bullock, W. O. (M.)
 Vallandingham, J. L. (L.)
Louisville—Jefferson, C. W. (L.)
 Richardson, J. B. (C.)
Mayfield—Pryor, J. R. (L.)
 Puryear, J. G. (L.)
Owensboro—Oldham, S. P. (C.)
Salt Lick—Nickell, H. L. (L.)
Somerset—Jasper, R. F. (L.)
Valley View—Dawson, J. L. (L.)

LOUISIANA

Alexandria—Cappel, M. (M.)
Blackburn—Palmer, F. (L.)
Lake Charles — Kushner, L. Z. (C.)
Leesville—Palmer, N. M. (L.)
Minden—Norman, B. A. (L.)
New Orleans—Guthrie, J. B. (M.)
 Querens, P. L. (L.)
 Voss, R. C. (L.)
Reids—Lane, L. T. (L.)
Ruston—Calhoun, D. S. (M.)
Springfield—Ehlert, J. M. (L.)

MAINE

[illegible] M. P. (L.)
[illegible] H. L. (L.)
[illegible] B. (L.)
[illegible], A. H. (C.)
Portland—Fisher, S. E. (C.)
West Paris—Wheeler, F. E. (L.)

MARYLAND

Baltimore—Chatard, J. A. (M.)
 Cohen, L. (C.)
 Daves, J. T. (L.)
 Hanna, M. J. (C.)
 Knapp, H. C. (C.)
 Mason, V. R. (C.)
 Moss, W. L. (L. C.)
 Neill, W., Jr. (L.)
 Sydenstricker, V. P. (C.)
 Wharton, L. R. (C.)
 Whitham, L. B. (C.)
Biddeford—Hill, P. S. (C.)
Cambridge—Smith, M. D. (L.)
Elkton—Cawley, W. D. (C.)
North East—Priest, W. M. (L.)
Port Deposit — Richards, G. H. (C.)

MASSACHUSETTS

Boston—Cohen, S. A. (L.)
 Denny, G. P. (C.)
 Di Mento, V. J. (L.)
Emerson, P. W. (L.)
 Goodall, H. W. (L. C.)
 Hammond, W. J. (C.)
 Hodgkins, E. M. (L.)
 Irving, F. C. (C.)
 King, E. (L.)
 Kissock, R. J. (C.)
 Knowles, W. F. (M.)
 Levins, N. N. (L.)
 Merrill, A. S. (M.)
 Mixter, C. G. (M.)
 Mixter, W. J. (M.)
 O'Neil, R. F. (M.)
 Paul, B. D. (L.)
 Phaneuf, L. E. (L.)
 Shapleigh, H. L. (L.)
 Tobey, H. G. (C.)
 Tooker, H. C. (L.)
 Torbet, J. R. (C.)
 Verhoeff, F. H. (M.)
 Vincent, B. (M.)
Charleston—Stacey, W. D. (L.)
Easthampton — Winslow, E. S. (C.)
Fall River—Fennelly, D. J. (C.)
 Miot, J. D. (L.)
 Watt, C. H. (C.)
Haverhill—Connor, G. J. (L.)
Holyoke—Gibson, F. L. (L.)
Longmeadow—Dexter, F. F. (L.)
Lowell—Ellison, D. J. (L.)
Millbury—Hurd, A. G. (C.)
Montague—Cooke, G. A. (C.)
Revere—Sandler, F. F. (L.)
Salem—Trueman, N. G. (C.)
Springfield—Byrnes, H. F. (C.)
 Connery, W. L. (L.)
 Eastman, A. C. (C.)
 Jones, F. D. (L.)
 Judd, E. H. (L.)
Worcester—Cahill, J. W. (C.)
 Gage, H. (M.)
 Kinnicutt, R. (M.)
 Paglia, J. J. (L.)

MICHIGAN

Ann Arbor—DePree, P. J. (C.)
 Kraft, R. W. (C.)
Battle Creek—Gage, J. G. (L.)
 Sleight, R. D. (C.)
Bay City—Huckins, E. S. (L.)
Clare—Mussell, A. R. (L.)
Decker—Woodhull, C. G. (C.)
Detroit—Bennett, Z. B. (L.)
 Bryant, A. E. (L.)
 Dretzka, L. J. (L.)
 Duyer, F. (L.)
 Ford, W. D. (M.)
 McLean, A. (Col.)
 Simpson, C. E. (C.)
 Vaughan, J. W. (L. C.)
 Walker, F. B. (M.)
Elk Rapids—Yerkes, L. N. (C.)
Eloise—Chance, J. H. (L.)
Jackson—Munro, C. D. (C.)
Lake Odessa — McLaughlin, N. (L.)
Northville—Henry, T. B. (M.)
Redford—Tupper, R. D. (L.)
Saginaw—Bruce, J. D. (M.)
Stanton—Danforth, M. E. (L.)
Union City—Bien, W. J. (L.)
Wyandotte—Knapp, J. G. (L.)

MINNESOTA

Austin—Allen, C. C. (C.)
Canby—Homlberg, L. J. (L.)
Duluth—Walkowiak, S. A. (L.)
International Falls—Withrow, M. E. (C.)
Madison—Lee, W. N. (L.)
Minneapolis — Gallagher, B. J. (L.)
 Gillis, F. L. (L.)
 Morrison, A. W. (C.)
Redwood Falls — McPheeters, H. O. (L.)
Rochester — Eusterman, G. B. (C.)
 Lillie, W. I. (L.)
 Pollock, L. W. (L.)
St. Paul—Dennis, W. A. (L. C.)
Stewart—Kohler, F. G. (L.)

MISSISSIPPI

Boyle—Merritt, W. M. (L.)
Clarksdale—Carr, I. P. (L.)
Cleveland—Turner, F. P. (L.)
Cruger—Strahan, W. H. (C.)
Erwin—Scott, W. W. (L.)
Friars Point—Slack, J. A. (C.)
[illegible] F. (C.)
[illegible] B. (C.)
[illegible], G. W. (L.)
Ripley—Barbee, J. T. (M.)
Rosedale—Nobles, E. R. (L.)
Tunica—Alexander, M. J. (L.)
 Williams, W. H. (L.)
Union—Hagan, Z. C. (C.)

MISSOURI

Canton—Crank, A. C. (C.)
Cardwell—Scott, A. G. (L.)
Creighton—Griffith, E. M. (C.)
Dixon—Rolens, L. E. (L.)
Fredericktown—DeHoney, F. R. (L.)
Hannibal—Spencer, F. B. (C.)
Kansas City—Dargatz, F. E. (L.)
 Hurwitt, F. (C.)
 McCarty, V. W. (L.)
 Owens, J. L. (L.)
 [illegible] M. (L.)
 [illegible])
 [illegible] (L.)
 [illegible], L. R. (L.)
 [illegible] M. (L.)
 [illegible] P. C. (L.)
 [illegible] W. (L.)
 [illegible] C. L. (L.)
 [illegible] W. (C.)
 [illegible] (L.)
 [illegible], J. E. (L.)
St. Louis—Boyne, W. W. (C.)
 Clausen, S. W. (L.)
 Dean, W. T. (L.)
 Draney, T. L. (L.)
 Gettys, S. L. (C.)
 Goldstein, M. A. (M.)
 Griot, A. J. (L.)
 Harnagel, F. H. (L.)
 Herchenroeder, L. C. (C.)
 Heuer, S. (C.)
 Homan, J. S. (L.)
 Kelly, C. A. (L.)
 Kowalsky, E. I. (L.)
 Lonsway, M. J. (L.)
 McClure, T. C. (L.)
 Shreffler, A. R. (L.)
 Slaughter, F. M. (L.)
 Spivy, R. M. (C.)
 Steinle, G. H. (L.)
 Wainright, A. G. (C.)
Sweet Springs—Parsons, C. W. (L.)
Utica—Carpenter, G. W. (L.)
Vancleve—Nieweg, G. A. (L.)
Webster Groves—Goodrich, H. A. (L.)

MONTANA

Billings—Arnold, F. L. (L.)
 Morrison, W. R. (C.)
Cascade—Vanatta, F. C. (C.)
Judith Gap—Gans, E. M. (C.)
Kalispell—O'Neill, E. D. (C.)
Medicine Lake — Storkan, J. C. (L.)
Missoula—Shea, W. E. (M.)
Roundup—Welsh, T. W. (C.)
Scobey—Needles, A. S. (L.)
Sheridan—Sutherland, E. L. (C.)

NEBRASKA

Albion—McRae, F. J. (C.)
Harrison—Barns, F. M. (M.)
Hastings—McPherson, J. B. (C.)
Lincoln—Wilmeth, H. D. (L.)
 Zemer, S. G. (L.)
Madison—Wilson, E. O. (L.)
Millard—Fossler, J. J. (L.)
Norfolk—Barry, A. C. (L.)
 Carson, H. R. (C.)
Oakland—Swenson, S. A. (C.)
Omaha—Brown, A. J. (M.)
 Henske, J. A. (C.)
 Kleyla, J. R. (L.)

Omaha—Patton, J. M. (M.)
Potts, J. B. (C.)
North Platte—Kerr, T. J. (C.)
Winnetoon—Crook, R. (C.)

NEVADA

Reno—Abbott, H. A. (L.)

NEW HAMPSHIRE

Nashua—Rowe, F. E. (L.)

NEW JERSEY

Allentown—Anderson, H. M. (C.)
Avon-by-the-Sea — Angeny, F. G. (M.)
Belleville—Whitney, L. D. (L.)
Burlington—Conroy, J. S. (L.)
Elizabeth—Gerendasy, J. (L.)
Englewood—McKinlay, C. M. (L.)
Sullivan, M. J. (C.)
Hamburg—Coleman, J. G. (L.)
Jersey City—Jones, J. M. (C.)
Miner, D. (M.)
Wilson, J. L. (L.)
Kearney—Goldstein, W. H. (L.)
Newark—Disbrow, G. W. (L.)
Fewsmith, J. L. (C.)
Gale, G. B. (M.)
Hurff, J. W. (L.)
Rich, H. H. (L.)
Newton—Morrison, F. H. (L.)
Orange—Matthews. H. E. (C.)
Paterson—McBride, A. F. (M.)
Neer, F. Y. (M.)
Russell, C. B. (L.)
Tood, F. H. (C.)
Perth Amboy — McCormick, W. H., Jr. (L.)
Pitman—Lummis, M. F. (C.)
Plainfield—Childers, R. J. (C.)
Krans, E. S. (C.)
Somerville—Ely, L. (M.)
Summit—Lawrence, W. H., Jr. (M.)
Trenton—Adams, C. F. (M.)

NEW MEXICO

Clayton—Daniel, D. C. (L.)
Muir, J. W. (L.)
Lovington—Gallatin, H. H. (L.)

NEW YORK

Albany—Doescher, T. F. (C.)
Lipes, H. J. (M.)
Randall, G. B. (L.)
[illegible] M. K. (C.)
[illegible] W. B. (L.)
[illegible] J. D. (L.)
Brooklyn—Agris, H. (L.)
Baldwin, J. S. (C.)
Best, W. H. (M.)
Blackmar, B. G. (C.)
Commiskey, L. J. J. (M.)
Davison, W. C. (L.)
Feinblatt, H. M. (L.)
Feinier, L. G. (L.)
Fiske, E. H. (L. C.)
Haft, H. H. (L.)
Houghton, P. F. (L.)
Kelly, J. D. (C.)
Lavine, M. R. (L.)
Moses, H. M. (M.)
Nemser, A. (L.)
Quinn, J. R. (L.)
Saniter, E. H. (L.)
Sharp, J. C. (C.)
Tirman, S. (L.)
Buffalo—Chadwick, J. G. (C.)
Culbertson, H. W. (L.)
Haley, F. J. (L.)
Kurek, L. S. (C.)
Lohnes, H. R. (C.)
Long, F. H. (L.)
Machemer, W. L. (L.)
McDowell, H. C. (L.)
Oppermann, G. M. (L.)
Smith, H. A. (C.)
Burke—Finney, F. F. (C.)
Canandaigua—Burgess, H. C. (L.)
Canisteo—Mitchell, H. H. (L.)
East Aurora—Klein, J. J. (C.)
Eastport—Hoole, L. P. (L.)
Elmira—Loop, R. G. (C.)
Pugh, D. E. (C.)
Far Rockaway—Tepper, A. S. (L.)
Florida—Many, C. W. (C.)
Forest Hills—MacNeal, W. J. (M.)
Franklin—Warren, L. C. (L.)
Geneseo—Senke, H. C. (L.)
Ithaca—Vose, R. M. (M.)
Kingston—Barnum, F. L. (L.)
Lancaster—Mackey, C. H. (C.)
Mechanicsville — Crissey, G. W. (C.)
Middletown—Schultz, E. M. (L.)
New York—Abbott, T. J. (M.)
Allison, R. G. (L.)
Bancroft, F. W. (M.)
Beck, B. J. (C.)
Bleier, E. (C.)
New York—Boviard, D. (L. C.)
Boyd, C. S. (L.)
Branner, M. (C.)
Clark, J. B. (M.)
Cohn, M. (L.)
Cohn, S. (M.)
Connery, J. E. (L.)
Connors, J. F. (M.)
Cronk, H. T. (L.)
Denzer, B. S. (C.)
di Palma, S. (C.)
Emsheimer, H. W. (C.)
Ettelson, J. (C.)
Floyd, R. (L. C.)
Ford, W. M. (M.)
Frank, R. T. (M.)
Geist, S. H. (C.)
Gracey, G. F. (M.)
Graham, J. R. (C.)
Greenwald, M. (L.)
Halsey, R. H. (L. C.)
Held, R. J. (M.)
Helmuth, W. T. (M.)
Huddleson, J. H., Jr. (L.)
Johnson, H. F. (L.)
Johnston, H. C. (L.)
Keating, J. J. H. (L.)
Kent, J. M. (M.)
Kilbane, E. F. (M.)
Levy, E. (L.)
Levy, M. A. (C.)
MacGuire, C. J., Jr. (C.)
Martin, T. A. (M.)
McLean, F. (M.)
Mecca, G. J. (L.)
Morrow, A. S. (L. C.)
Osnato, M. (C.)
Peightal, T. C. (L.)
Ramsey, G. H. (L.)
Roof, S. W. (C.)
Rosewater, C. A. (C.)
Schwartz, H. J. (L.)
Selinger, J. (L.)
Siegelstein, M. J. (L.)
Siglar, H. B. (C.)
Silberman, M. K. (L.)
Sloan, H. L. (L.)
Sneed, W. L. (L.)
Steele, K. B. (L.)
Steiner, J. M. (M.)
Sternberger, E. (M.)
Stillman, E. (C.)
Strauss, S. (M.)
Sullivan, J. F. (L.)
Thomson, E. S. (M.)
Tilton, B. T. (M.)
Trimble, J. F. (L.)
Van Beuren, F. T. (M.)
Wagner, J. (C.)
Wallace, G. B. (M.)
Walsh, R. E. (M.)
Williamson, A. H. (L.)
Wilson, R. M. (L.)
Yankauer, S. (M.)
Yocum, J. G. (M.)
Niagara Falls—Barry, R. S. (C.)
Jerauld, F. N. C. (M.)
North Rose—Roney—F. F. (L.)
North Tonawanda—Maldiner, H. O. (L.)
Norwich—Gibson, E. F. (C.)
Olean—Johnson, J. A., Jr. (L.)
Oriskany Falls—Wilson, R. B. (L.)
Rochester—Burnes, E. H. (L.)
Chapman, M. (C.)
Hennington, C. W. (M.)
Round Lake—Paul, G. P. (C.)
Schenectady—Ham, S. S. (C.)
Woodell, C. W. (C.)
Seneca Falls—Brandt, G. M. (L.)
Stanley—Selover, C. W. (M.)
Staten Island—Callahan, F. F. (L.)
Patton, J. R. (L.)
Syracuse—Britten, G. S. (M.)
Doust, H. B. (M.)
Lawless, A. T. (L.)
MacGruer, H. A. (M.)
Silverman, A. C. (L.)
Tonawanda—Fairbanks, H. C. (L.)
Troy—Hambrook, A. J. (C.)
Stalter, G. R. (L.)
Trotter, W. (L.)
Yonkers—Getty, S. E. (M.)
Kennedy, V. (L.)

NORTH CAROLINA

Albemarle—Dunlap, L. V. (L.)
Asheville—Fletcher, M. H. (M.)
Aurora—Bynum, C. M. (L.)
Bakersville—Gouge, A. E. (L.)
Charlotte—Allan, W. (C.)
Brenizer, A. G. (L. C.)
Greensboro—Long, J. W. (L. C.)
Lumberton—Beam, R. S. (L.)
Moyock—Bagley, R. A. (L.)
North Charlotte—Blalock, B. K. (L.)
Raleigh—Campbell, A. C. (C.)
McKee, J. S. (C.)
Turner, H. G. (C.)
Rockwell—Earnhardt, J. M. (L.)
Wadesboro—Allen, C. I. (L.)
Davis, J. M. (L.)
Waynesville—Way, J. H. (M.)

NORTH DAKOTA

Jamestown—Swanson, C. A. (L.)
Mayville—Martin, T. P. (C.)
Montpelier—Plant, J. H. (L.)
Westhope—Greene, E. E. (L.)

OHIO

Akron—Logan, G. M. (C.)
McKay, R. H. (L.)
Riley, F. W. (L.)
Springer, J. E. (L.)
Andover—Osborne, N. B. (L.)
Canton—Calhoun, A. H. (L.)
Folk, E. S. (L.)
Cincinnati—Aub, J. C. (L.)
Cragg, H. C. (C.)
Fogel, E. I. (L.)
Gath, P. (M.)
Hall, J. A. (L. C.)
King, C. (M.)
Oxley, F. M. (L.)
Palmer, D. W. (C.)
Taylor, N. E. (L.)
Topmoeller, G. B. (L.)
Williams, J. F. (L.)
Cleveland—Crawford, M. L. (L.)
Hill, W. C. (M.)
Lytle, J. A. (C.)
Wychgel, J. N. (C.)
Colton—Garwood, G. E. (C.)
Columbus—Clouse, K. A. (L.)
Goodman, S. J. (M.)
Hindman, S. (C.)
Johnson, R. A. (L.)
McGavran, C. W. (C.)
Rice, R. A. (C.)
Shaffer, E. R. (L.)
Steinfeld, A. M. (C.)
Dayton—Carley, A. W. (L.)
Gregg, W. D. (L.)
Roehm, W. (L.)
Sullivan, C. (C.)
Fremont—Kuntz, C. I. (L.)
Hamilton—Skinner, D. M. (L.)
Huntsburg—Williams, A. D. (L.)
Ironton—Henninger, O. H. (L.)
Jeffersonville—French, J. H. (L.)
Kalida—Siddall, J. D. (L.)
Kenton—Schuette, R. G. (L.)
Lima—Curtiss, E. J. (L.)
Poling, J. B. (L.)
Linden Heights—Valentine, C. M. (L.)
Lisbon—Bennett, H. W. (C.)
Lorain—Thomas, D. (L.)
Lore City—Johnston, A. R. (L.)
Marietta—Penrose, J. B. (C.)
North Baltimore—Cavett, C. S. (L.)
Powell, E. A. (L.)
Norwalk—Battles, M. L. (L.)
Orrville—Blankenhorn, M. A. (C.)
Painesville—Jones, E. S. (L.)
Salem—Derfus, L. F. (L.)
Shandon—Clark, B. (L.)
Solon—Thompson, R. B. (C.)
Springfield—Andre, R. M. (L.)
St. Marys—Noble, N. V. (L.)
Tiffin—Chamberlain, R. C. (C.)
Toledo—Ballmer, Z. H. (L.)
Brim, B. B. (L.)
Miller, L. D. (L.)
Williamstown—Tombaugh, A. A. (L.)
Wyoming—Paul, C. M. (M.)
Youngstown—Smyth, A. P. (L.)

OKLAHOMA

[illegible] O. (C.)
[illegible] C. H. (L.)
[illegible] G. M. (L.)
Haskell—Shackelford, T. T. (L.)
Helena—Reichley, E. J. (L.)
Oklahoma City—Bailey, F. M. (C.)
Stout, M. E. (L.)
Webb, R. A. (C.)
West, W. K. (L.)
Ryan—Wade, L. L. (L.)
Sand Spring—Campbell, G. C. (L.)
Shattuck—Rollo, J. W. (L.)
Tonkawa—Stricklen, H. M. (C.)
Webbers Falls—Campbell, E. A. (C.)

OREGON

Ashland—Boslough, A. W. (L.)
Crane—Denman, H. (L.)
Falls City—Prime, G. E. (L.)
Hood River—Sifton, J. W. (C.)
Independence—Hewett, F. G. (L.)
Jefferson—Van Winkle, J. O. (L.)
La Grande—Ralston, F. L. (L.)
Madras—Haile, H. B. (L.)
Milwaukie—Taylor, W. R. (C.)
Portland—Breckenridge, M. M. (M.)
Portland—Morse, E. W. (C.)
Petheram, C. C. (L.)
Salem—Bates, C. E. (L.)
Silverton—Steelhammer, H. W. (L.)
Springfield—Pollard, W. H. (L.)

PENNSYLVANIA

Adrian—Quigley, J. E. (L.)
Albion—Peters, C. O. (L.)
Alicia—Lang, G. W. (L.)
Altoona—Hogue, J. D. (L.)
Hoover, E. J. (L.)
Ardmore—Stein, W. J. (L.)
Bridgeville — Winkelman, N. W. (L.)
Chambersburg—Wright, F. G. (L.)
Chester Springs — Wells, F. H. (L.)
Clarion—Hetzel, W. B. (L.)
Claysville—Johnson, E. J. (C.)
Cresson—Lynch, J. A. (C.)
Douglassville—Sener, W. J. (C.)
Duquesne—Szabo, D. E. (L.)
Erie—Gleeten, S. D. (C.)
Fountain Springs—Wyatt, J. H. (L.)
Foxburg—Camp, J. N. (L.)
Greensburg—Singer, J. J. (C.)
Hannastown—Kepple, A. S. (L.)
Homestead—Kallaway, S. (L.)
Industry—Holland, S. H. (L.)
Jeanette—Goble, C. A. (L.)
Latrobe—Nealen, S. W. (L.)
Lewisburg—Gundy, C. A. (L.)
McKeesport—Hunter, A. (C.)
McKees Rocks—Piper, C. L. (L.)
Mount Oliver—Truter, C. W. (C.)
New Bethlehem—Dougherty, W. O. (L.)
Oil City—Kofford, B. S. (L.)
Philadelphia — Baer, B. F., Jr. (M.)
Beardsley, E. J. G. (L. C.)
Bernard, M. B. (L.)
Blasser, J. A. (L.)
Bogart, A. E. (M.)
Chartock, S. (L.)
Fetetrolf, G. (M.)
Francine, A. P. (M.)
Harrison, W. J. (M.)
Henry, J. N. (M.)
Kelly, F. J. (M.)
Klauder, J. V. (M.)
Laplace, E. (M.)
Laws, G. M. (C.)
Lull, C. B. (L.)
Mackel, C. F. (L.)
McCarthy, D. J. (L.)
McDowell, J. E. (L.)
McGivern, C. S. (L.)
McKnight, H. A. (C.)
Nassau, C. F. (M.)
O'Drain, T. I. (C.)
O'Neill, J. F. (L.)
Pfeiffer, D. B. (L. C.)
Piersol, G. M. (L. C.)
Price, C. E. (C.)
Prince, L. H. (M.)
Repplier, S. J. (C.)
Sailer, J. (L. C.)
Silverman, G. J. (L.)
Smoczynski, M. E. (L.)
Tweddel, G. K. (L.)
Wang, C. W. (L.)
Watt, C. C., Jr. (C.)
Pittsburgh—Cameron, D. W. (C.)
Carmalt, H. G. (L.)
Gaggin, V. S. (C.)
MacLachlan, A. A. (L. C.)
Marshall, W. (C.)
McMaster, G. C. (C.)
Munster, J. A. (L.)
Rapport, D. L. (L.)
Ray, W. B. G. (M.)
Robinson, J. W. (C.)
Thigpen, F. L. (L.)
Plumville—Smith, C. M. (C.)
Port Allegany—McGranor, W. J. (L.)
Reading—Gable, F. J. (L.)
Krick, G. W., Jr. (L.)
Royersford—Buckwalter, J. A. (L.)
Sayre—Higgins, J. M. (L.)
Sharpsburg—Stanton, C. C. (C.)
Smithfield—Guiher, H. B. (C.)
South Bethlehem—McAvoy, J. B. (L.)
Tullytown—Klenk, J. M. (L.)
Uniontown—Doran, B. P. (L.)
Wesleyville—Thompson, R. W. (L.)
Widnoon—Hillard, T. R. (C.)
Womelsdorf—Livingood, J. E. (L.)

RHODE ISLAND

Providence—Brown, H. H., Jr. (L.)
Persky, M. A. (L.)

SOUTH CAROLINA

Belton—Haynie, W. R. (L.)
Chester—McFadden, R. H. (L.)
Clarks Hill—Sharpton, B. T. (L.)
Columbia—Adams, E. C. L. (C.)
Wheeler, S. E. (L.)
Estill—Johnston, P. J. (L.)
Eutawville—Coney, R. J. (L.)
Mullins—Martin, F. L. (L.)
Orangeburg—Shecut, L. C. (C.)
Rock Hill—Blackmon, W. R. (L.)
Sumter—Nash, J. F. (L.)
Westminster—Simpson, F. T. (L.)

SOUTH DAKOTA

[illegible]—[illegible], R. B. C. (L.)
[illegible]—[illegible], J. E. (C.)
Flandreau—Spafford, F. A. (C.)
Highmore—Sigler, G. V. (C.)
Jefferson—Moodie, W. C. (L.)

TENNESSEE

Baileytown—Bailey, C. Y. (L.)
Bogota—Austin, D. T. (L.)
Bon Air—Mason, E. C. (L.)
Chattanooga—Shumacker, L. (M.)
Clifton—Culp, E. M. (L.)
Covington—Lindsey, L. J. (L.)
Dyer—Jackson, J. (L.)
Erwin—Stack, R. E. (L.)
Fayetteville—Goodrich, C. L. (C.)
Hampshire—Jones, J. H. (L.)
Harms—Sumners, W. P. (L.)
Iron City—Hardison, C. C. (C.)
Johnson City—Went, E. T. (C.)
Knoxville—Young, R. M. (L.)
Memphis—Alford, W. G. (L.)
Edwards, S. L. (C.)
Fleming, J. S. (L.)
Graham, F. (C.)
Henning, D. M. (M.)
Hobson, J. J. (C.)
Mason, R. F. (C.)
Nashville—Bacote, R. H. (L.)
Goldberg, N. H. (L.)
Mitchell, L. A. (L.)
Sullivan, R. E. (L.)
Witt, W. H. (M.)
Rockwood—Nelson, J. E. (C.)

TEXAS

[illegible] J. (C.)
[illegible] D. (L.)
Clarksville—[illegible], R. A. (L.)
Dallas—Boyce, W. A. (L.)
Brewer, T. C. (L.)
Levy, H. R. (L.)
Milliken, S. R. (C.)
Trumbull, R. A. (C.)
Usry, R. S. (C.)
Williams, T. S. (L.)
Del Rio—Boren, S. L. (C.)
Edna—Hogg, G. (L.)
El Paso—Stevens, B. F. (C.)
Fort Worth — Kingsbury, H. B. (C.)
Galveston—Hendry, C. H. (L.)
Houston—Greer, A. E. (L.)
Howard, A. P. (C.)
Ramsay, W. E. (L.)
Jonesboro—Moore, W. M. (L.)
Liberty Hill—Nowlin, A. (L.)
Loraine—Stevenson, C. W. (L.)
Plainview—Nichols, E. O. (L.)
Polytechnic—Huffman, A. M. (L.)
Quanah—McDaniel, R. R. (L.)
Quinlan—Goode, E. P. (L.)
Rosebud—Phillips, J. H. (L.)
San Antonio — Bassett, W. M. (M.)
Mitchell, J. L. (L.)
Paschal, F. L. (C.)
Rogers, L. M. (L.)
Ross, R. R. (L.)
San Marcos — DeSteigner, J. R. (L.)
Sweetwater—Fortner, A. H. (L.)
Tahoka—Turrentine, L. E. (L.)
Temple—Scott, K. J. (L.)
Terrell—Castner, C. W. (L.)
Texarkana—Read, W. K. (M.)
Three Rivers—Davis, R. R. (L.)
Throckmorton—King, J. E. (L.)
Uvalde—Myrick, C. R. (L.)
Waco—Croshthwait, W. L. (C.)
Dudgeon, H. R. (M.)
Quay, J. E. (L.)
West Point—Turner, W. F. (L.)
Wichita Falls—Miller, E. T. (L.)
Winters—Jennings, T. V. (L.)

UTAH

Delta—Broaddus, C. A. (L.)
Ephraim—Beal, D. O. (L.)
Logan—Budge, E. S. (C.)
Salt Lake City — Flood, T. A. (M.)
Springville—Clarke, G. W. (C.)
Vernal—Green, G. W. (L.)

VERMONT

Arlington—Russell, G. A. (C.)
Newport—Genge, V. P. (L.)

VIRGINIA

Amelia—Putney, W. R. (L.)
Burgess Store—Selby, R. W. (L.)
Charlottesville — Nelson, H. T. (M.)
Elkton—Miller, E. B. (L.)
Hopewell—Levinson, F. (C.)
Lynchburg—Carroll, J. W. (M.)
Marion—Blankinship, R. C. (L.)
McKenney—Young, E. W. (C.)
Norfolk—Kennon, B. R. (M.)
Pocahontas—Haller, D. A. (M.)
Richmond—Boyle, M. L. (L.)
Brinkley, A. S. (L.)
Eckles, B. F. (L.)
McGuire, S. (L. C.)
Peple, W. L. (M.)
Preston, R. S. (L.)
Smith, J. H. (C.)
Timberlake, R. E. (L.)
Weitzel, J. S. (L.)
Wilkinson, R. J. (L.)
Wright, R. H. (C.)
Roanoke—Farmer, F. A. (L.)
Schuyler—Sizer, A. A. (L.)
Staunton—Bell, R. P. (M.)

WASHINGTON

Almira—Holgate, F. C. (L.)
Arlington—Harris, J. E. (L.)
Auburn—Brandt, W. H. (C.)
Dayton—Day, W. W. (L.)
Lyman, J. C. (C.)
Everett—Findley, H. P. (C.)
Stewart, J. K. (L.)
Richland—Hopper, C. D. (C.)
Seattle—Eagleson, J. B. (M.)
Groenlund, W. A. (L.)
Jordan, A. (C.)
Kintner, W. C. (L.)
Lazelle, H. G. (C.)
Mitchell, J. W. (L.)
Spokane—Ahlquist, R. E. (L.)
Butts, C. E. (M.)
St. John—McIntyre, D. (C.)
Tacoma—Blair, H. C. (L.)
Judd, H. S. (C.)
Keller, W. N. (M.)
Nace, A. G. (C.)
Penney, W. B. (C.)
Rhea, E. B. (C.)
Wheeler, E. C. (M.)
Vancouver—Wilcox, C. C. (L.)
Yakima—Cornett, G. W. (L.)

WEST VIRGINIA

Ashland—Scott, D. P. (L.)
Copeton—Lanich, L. J. (L.)
Fairmont—Yost, H. R. (L.)
Hansford—Ford, C. P. S. (L.)
Huntington—Vinson, L. T. (C.)
Ivaton—Farley, R. F. (L.)
Marting—Broschart, F. J. (M.)
Martinsburg—Williams, D. T. (L.)
Matewan—Triplett, W. H. (L.)
Morgantown—McBee, T. J. (L.)
South Charleston—Lambert, A. C. (L.)
Weirton—Talbott, H. H. (L.)
Wheeling—Megrail, E. (C.)
Wingerter, C. A. (C.)
Williamson—Whittico, J. M. (L.)

WISCONSIN

Brillion—Meyer, K. T. (L.)
Chilton—Hugo, D. G. (L.)
Eastman—Myrick, A. L. (L.)
Gilman—Neis, F. P. (L.)
Green Bay—Cowles, R. L. (L.)
Crikelair, F. L. (L.)
Greenwood—Kennedy, F. H. (C.)
Janesville—Waufle, G. C. (L.)
La Crosse—Rosholt, J. (L.)
Townsend, E. H., Jr. (L.)
Madison—Middleton, W. S. (C.)
Milwaukee—Burback, T. H. (L.)
Corcoran, C. J. (L.)
Foerster, O. H. (C.)
Lillie, O. R. (L.)
Merten, P. J. (L.)
Mitchell, S. R. (L.)
Schlaikowski, J. P. (L.)
Sykes, L. G. (C.)
Montford—Ketterer, E. A. (C.)
Oshkosh—Conley, J. M. (C.)
Rice Lake—Droock, V. (L.)
Richland Center—McCarthy, H. C. (C.)
Superior—Lohmiller, R. K. (L.)
Rollefson, C. J. (C.)
Union Grove—Parker, T. G. (L.)
Walworth—Curless, G. W. (L.)
Wausaw—Flemming, E. E. (L.)
Thielke, G. A. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

ALABAMA

Montgomery—Boswell, F. P.

CALIFORNIA

Coronado—Yates, J. C.
Long Beach—Sweet, R. B.
Los Angeles—Bonynge, C. W.
Reeves, J. W.
Merced—Davis, B.
Oakland—Schutz, M. H.
San Diego—Hosmer, C. M.
Marsh, O. G.
San Francisco—Bryant, F. J.

CONNECTICUT

Seymour—Perrins, H. B.

DISTRICT OF COLUMBIA

Washington—Macatee, H. C.
Vaughan, G. T.

FLORIDA

Pensacola—Brink, F. A.
Hutchinson, C. E.
Quina, M. E.

GEORGIA

Newman—Amis, F. J., Jr.

ILLINOIS

Chicago—Conger, S. B.
Coughlin, J. P.
Doktorsky, P. H.
O'Brien, T. J.
Oak Park—Meacham, H. F.

INDIANA

Bloomington—Woolery, H.
Kendallville—Williams, H. O.
Lebanon—Coons, J. D.

IOWA

Sioux City—Bellaire, R. F.
Woodbine—Flothow, M. W.

MARYLAND

Baltimore—Bawden, G. A.

MASSACHUSETTS

Boston—Goodpasture, E. W.
Sears, F. M.
Chelsea—Barrow, A. R.
Gardner—Jewett, E. P.
Watertown—Kilgore, A. R.
Wellesley—Anthony, G. C.
Weston—Van Nuys, F.

MICHIGAN

Battle Creek—Brainard, C. W.

MINNESOTA

Hector—Colby, W. L.

MISSOURI

Joplin—Moody, E. E.
Kansas City—Tyree, J. I.
St. Louis—Blank, O. E.
Windsor—Wall, H. M.

NEW YORK

Bay Shore—Low, J. T.
Brooklyn—Delany, J. J.
Eastmond, C.
Gallagher, V. J.
Stefano, J. J.
Cooperstown—Jarvis, G. L. B.
Great Neck Station—Bull, W. J.
Mineola—Sawicki, A. M.
New York—Banach, L.
Cady, L. B.
Conroy, J. E.
Greeberg, D.
Ruderman, L. M.
Vail, J. I. B.
Van Fleet, J. F.
Rochester—Edwards, H. W.
O'Brien, F. J.

NORTH CAROLINA

Charlotte—Guthrie, A. D.
Guthrie, W. G.
Norton—McGuire, B. B.
Wilkesboro—Rousseau, J. P.

OHIO

Columbus—Dodd, V. A.
Hugger, C. C.
Minthorn, H. A.
Curtice—Lorenzen, M. R.

OREGON

Falls City—Montgomery, G. W.
Portland—Ghormley, J. C.
Young, R. G.

PENNSYLVANIA

Easton—Krebs, S. A.
Harrisburg—Kilgore, F. D.
Hazelton—Hugo, J. A.
Philadelphia—Goldburgh, H. L.
Holloway, T. B.
McCullough, F. J.
Mott, E. L.
Schumann, E. A.
Sharkey, J. A.
Smith, F. W.
Treacy, A. J. M.
West, C. F.
Pittsburgh—Carson, W. E.
Scranton—Donahoe, J. P.
Shillington—High, I. B.

SOUTH CAROLINA

Charleston—Cannon, J. H.
Sosnowski, J. C.
Luray—Johnston, B. R.
Rock Hill—Hay, L. S.

TENNESSEE

Memphis—McCaughan, J. J.

TEXAS

Austin—Lasater, O. R.
Scott, Z. T.
Bonham—Davis, R. C.
Fort Worth—Anderson, J. F.
Houston—Lechenger, G. C.
Manor—Gregg, F. C.
Marlin—Smith, L. M.
San Antonio—Witt, G. F.

VIRGINIA

Charlottesville—Rixey, W. W.
Norfolk—Whitlock, S. B.
Richmond—Upshur, F. W.

WISCONSIN

Milwaukee—Frankel, A. H.
Horwitz, J. J.

CORRECTION

In the issue of March 22, under the heading "Honorable Discharges, Medical Corps, U. S. Army" *appears the name of* C. N. LARSON, Negaunee, Mich. This should have been Lieut. CARL NIEL LARSON, Detroit, Mich.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Arkansas

To Camp Meade, Md., from Camp Joseph E. Johnston, Capt. E. E. POYNER, Green Forest.

California

To Camp Kearney, Calif., as tuberculosis examiner, from Fort Bliss, Lieut. F. J. BARNET, Los Angeles.

To Camp Sherman, Ohio, base hospital, from Camp Sheridan, Capt. L. C. FROST, Los Angeles.

To Denver, Colo., from Camp Fremont, Capt. B. THOMAS, Palo Alto.

To Hoboken, N. J., from Camp Dix, Major G. J. McCHESNEY, San Francisco.

Colorado

To Denver, Colo., from Camp Dix, Capt. H. B. KILLOUGH, Pueblo.

Georgia

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Rochester, Minn.*, Mayo Clinic, for instruction, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to Fort McPherson, Ga.*, from Fort Oglethorpe, Lieut. O. S. GILLILAND.

District of Columbia

To Walter Reed General Hospital, D. C., from Camp Dix, Capt. J. A. CAHILL, Jr., Washington.

Florida

To Lakewood, N. J., from Camp Dix, Capt. E. JELKS, Jacksonville.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major J. D. MacRAE, Tampa.

Illinois

To Camp Meade, Md., from Miami, Fla., Major L. C. COLLINS, Chicago.

To Fort Des Moines, Iowa, from Camp Travis, Capt. D. N. EISENDRATH, Chicago.

To Fox Hills, N. Y., from Camp Sevier, Capt. G. U. LIPSHULCH, Chicago.

To Metuchen, N. J., Raritan Arsenal, from Camp Abraham Eustis, Lieut. L. L. TURNER, Chicago.

To Otisville, N. Y., from Long Beach, Capt. H. H. BAY, Chicago.

To report to the commanding general, Southeastern Department, from Camp Wadsworth, Lieut. W. E. CLAY, Mount Carroll.

Indiana

To Camp Zachary Taylor, Ky., base hospital, from Camp Custer, Lieut. R. C. OTTINGER, Indianapolis; from Camp Dix, Major J. P. SPOONER, Peru.

To Fort Sheridan, Ill., from Fort Oglethorpe, Capt. C. E. ORDERS, Indianapolis.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major C. R. SOWDER, Indianapolis.

Iowa

To Biltmore, N. C., from Denver, Capt. T. B. LACEY, Glenwood.

To Plattsburg Barracks, N. Y., from Camp Custer, Capt. M. B. GALLOWAY, Webster City.

Kentucky

To Hoboken, N. J., from Camp Jackson, Lieut. W. J. FLOWERS, Columbia.

To New Haven, Conn., from Camp Shelby, Capt. V. A. BARL, Owensboro.

Louisiana

To Fort McPherson, Ga., from Camp Dix, Capt. C. D. BARKLEY, New Orleans.

To Fort Sam Houston, Texas, from Walter Reed General Hospital, Capt. J. T. O'FERRALL, Jr., New Orleans.

Maryland

To Baltimore, Md., and on completion *to Fort McHenry, Md.*, from Surgeon-General's Office, Major C. BAGLEY, Jr., Baltimore.

Massachusetts

To Camp Sherman, Ohio, base hospital, from Camp Dix, Lieut.-Col. P. P. JOHNSON, Beverly.

To Colonia, N. J., from Army Medical School, Major H. C. MARBLE, Boston.

To Fort McHenry, Md., from Army Medical School, Lieut. N. W. GILLESPIE, Boston; from Camp Upton, Capt. E. W. FISKE, Newton.

To Fort Snelling, Minn., from Camp Dix, Lieut. J. A. GOULD, Westboro.

To Fox Hills, N. Y., from Camp Lee, Lieut. W. R. SISSON, Boston; from Camp Upton, Lieut. G. A. WILKINS, Revere.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Boston, Capt. A. G. RICE, Springfield; from Camp Upton, Lieut. H. L. HIRSCH, Sringfield.

To Washington, D. C., Surgeon-General's Office, from Newport News, Major J. F. COUPAL, Boston.

Michigan

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Capt. C. W. MERRITT, St. Joseph.

To Detroit, Mich., from Camp A. A. Humphreys, Lieut. C. F. DUBOIS, Detroit; from Plattsburg Barracks, Lieut. H. A. REYE, Detroit.

To Fort Sheridan, Ill., from Camp Custer, Capt. C. B. GAUSS, Palo; Lieut. W. B. MARTIN.

To Walter Reed General Hospital, D. C., from Camp Dix, Major R. E. BALCH, Kalamazoo.

Minnesota

To Chicago, Ill., from Lakewood, Capt. R. J. E. ODEN, Minneapolis.

To Walter Reed General Hospital, D. C., from Camp Lee, Lieut. C. K. HOLMES, St. Paul. For instruction, and on completion *to his proper station*, from Fort McPherson, Lieut. S. V. HODGE, Minneapolis.

The following order has been revoked: *To San Diego, Calif.*, Rockwell Field, from Riverside, Lieut. R. A. JOHNSON, Minneapolis.

Missouri

To Camp Jackson, S. C., base hospital, from Dansville, Capt. W. T. PATTERSON, Shelbina.

To Camp Zachary Taylor, Ky., base hospital, from Camp Shelby, Capt. E. L. DORSETT, St. Louis.

To Fort McHenry, Md., from Camp Dix, Lieut.-Col. W. T. COUGHLIN, St. Louis.

To San Francisco, Calif., Letterman General Hospital, from Fort Oglethorpe, Lieut. W. S. CULPEPPER, Willow Springs.

To St. Louis, Mo., from Fort McHenry, Lieut.-Col. W. T. COUGHLIN, St. Louis.

Nebraska

To report to the commanding general, Western Department, from Vancouver Barracks, Lieut. W. E. MOGAN, Petersburg.

New York

To Camp Dodge, Iowa, base hospital, from Camp Dix, Major H. A. DURHAM, New York.

To Camp Upton, N. Y., base hospital, from Camp Dix, Capt. J. J. PARSONS, Cortland.

To Camp Lewis, Wash., base hospital, from Camp Fremont, Capt. E. M. JOHNSON, New York.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp Sevier, Lieut. M. A. McIVER, New York.

To Camp Meigs, D. C., to examine the command for nervous and mental diseases, from Camp Dix, Capt. W. M. KRAUS, New York.

To Camp Pike, Ark., base hospital, from Camp Gordon, Major F. G. HODGSON, Elmira.

To Camp Upton, N. Y., base hospital, from Camp Dix, Capt. C. M. ALLABEN, Roscoe; from Hoboken, Lieut. E. A. SPIES, New York.

To Eastview, N. Y., from Camp Upton, Major C. E. COON, Syracuse; from Walter Reed General Hospital, Lieut. S. EPSTEIN, New York.

To Fort Logan H. Roots, Ark., from Camp Travis, Lieut. A. RAVICH, Brooklyn.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Camp Upton Lieut. F. S. WETHERELL, Syracuse; from Fort Benjamin Harrison, Lieut. J. G. MORRISEY, Yonkers; from Fox Hills, Capt. L. H. FINCH, Amsterdam.

The following orders have been revoked: *To Camp Meade, Md.*, base *hospital*, from Fort Oglethorpe, Capt. H. R. WILLSE, Westfield. *To Fort McPherson, Ga.*, from San Juan, Major E. W. LEE, New York.

North Dakota

To Fort Sheridan, Ill., from Camp Dix, Capt. J. A. HALGRON, Bismarck.

Ohio

To Colonia, N. J., from Camp Dix, Major P. D. WILSON, Columbus.

To East Potomac Park, D. C., from Army Medical School, Lieut. F. BEEKEL, Cleveland.

To Fort McHenry, Md., from Camp Dix, Lieut. F. F. DAVIS, East Liverpool.

To Fort Sill, Okla., Post Field, from Fairfield, Ohio, Lieut. E. I. G. REINARTZ.

To St. Louis, Mo., from Camp Dix, Major P. G. BORDEN, Massillon.

To Washington, D. C., Surgeon-General's Office, and on completion *to Colonia, N. J.*, from Camp Dix, Major P. D. WILSON, Columbus.

Oregon

To Cape May, N. J., from Surgeon-General's Office, Capt. L. SELLING, Portland.

To San Francisco, Calif., Letterman General Hospital, from Camp Lewis, Capt. F. J. ZIEGLER, Portland.

Pennsylvania

To Camp Wadsworth, S. C., from Camp Jackson, Lieut. L. G. FLANNERY, Philadelphia.

To Cape May, N. J., from Camp Dix, Lieut. W. R. KRAUSS, Philadelphia.

To Fort Bliss, Texas, base hospital, from San Diego, Major A. W. YALE, Philadelphia.

To Fort McPherson, Ga., from Washington, D. C., Lieut. C. H. MANLOVE, Jr., Altoona.

To Fort Snelling, Minn., for consultation, and on completion *to Cape May, N. J.*, from Rochester, Minn., Major C. H. FRAZIER, Philadelphia.

To Otisville, N. Y., from Mineola, Col. A. J. SMITH, Philadelphia.

To Philadelphia, Pa., from Camp Upton, Lieut. P. A. LONERGAN, Dickson City.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Carlisle, Major D. M. W. GRANT; from Lakewood, Capt. W. P. HUGHES, Pittsburgh.

To Washington, D. C., from Camp Dix, Lieut. L. W. HUGHES, Tioga. Surgeon-General's Office, from Camp Crane, Lieut.-Col. R. SLEE, Swiftwater.

The following order has been revoked: *To Cape May, N. J.*, from Camp Dix, Lieut. W. R. KRAUSS, Philadelphia.

South Dakota

To Fort Snelling, Minn., from Camp Lewis, Lieut. D. SUTTON, Redfield.

Tennessee

To Camp Gordon, Ga., from Camp Dodge, Lieut. M. E. CANNON, Riceville.

Texas

To Belleville, Ill., Scott Field, from Detroit, Capt. W. R. RUSSELL, Ben Hur.

To Camp Bowie, Texas, base hospital, from Camp Dix, Capt. G. W. DAY, Fort Worth.

To Fort Douglas, Utah, from Houston, Capt. O. P. GOODWIN, Lamasco.

To Fort McHenry, Md., from Camp Dix, Lieut. J. R. WHISENANT, San Antonio.

To Fort McPherson, Ga., from Camp Bowie, Lieut. D. C. BURKES, San Antonio.

To Fort Sam Houston, Texas, base hospital, from Camp Bowie, Major J. H. GAMBRELL, Dallas; from Camp Dix, Lieut. F. N. HAGGARD, San Antonio.

To Fort Sill, Okla., Post Field, from Dallas, Lieut. S. G. ODOM; from Millington, Lieut. G. P. RAWLS, San Augustine.

To Fox Hills, N. Y., from Camp MacArthur, Lieut.-Col. S. W. FRENCH.

To Houston, Texas, Ellington Field, from Camp John Wise, Major A. M. LEHMAN.

To San Antonio, Texas, Kelly Field, from Dallas, Capt. L. G. BUCHANAN, Big Springs.

Utah

To Camp Meade, Md., from Long Beach, Capt. H. B. FORBES, Ogden.

Virginia

To Camp Meade, Md., to examine the command for nervous and mental diseases, from Camp Lee, Lieut. J. A. STRICKLAND, Norfolk.

To Fort Sheridan, Ill., from Camp Custer, Capt. C. W. MERCER, Richmond.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Radium and Oncologic Institute.—Through the interest of Mr. King C. Gillette, the Radium and Oncologic Institute has been established in Los Angeles, and a fireproof building, to cost about $65,000, is now under construction. The building will contain laboratories for clinical research work, and has a modern and complete roentgen-ray equipment and more than 1 gm. of radium with the necessary emanation apparatus and appliances. The institution will afford, for a fee consistent with the financial condition of the patient, treatment of neoplastic diseases. Profits earned above those required for the expense and maintenance of the institution will be devoted to scientific and research work. Dr. Rex D. Duncan, Los Angeles, has been selected as medical director and will be assisted by a resident staff consisting of a pathologist, roentgenologist, physicist, and other necessary assistants. The institution will be ready for operation early in August.

ILLINOIS

New Hospital in Rock Island.—The new St. Anthony's Hospital, Rock Island, is almost completed and will be ready to receive patients early in June. The new building has been constructed at a cost of about $240,000, is five stories in height, fireproof and contains 150 rooms.

Institute of Medicine to Discuss Reconstruction.—At its meeting of April 19, held at the City Club at 8 p. m., the Institute of Medicine will discuss "Reconstruction." Col. Frank Billings will speak on "Physical Reconstruction of the Disabled," and Capt. A. E. Bott, C. A. M. C., on "The Mentality of Convalescence."

Nurses Continue Suit.—Although the strike of the nurses of the Oak Park Hospital was called off, two of the striking nurses are said to have filed a petition in the circuit court to have the hospital prosecuted for alleged violations of the law, and to force the hospital authorities to obey the ten hour law.

Personal.—Mark Greer, Lieut., M. C., U. S. Army, Vandalia, now on duty with the British Expeditionary Forces, has been commissioned Captain, M. C., and returned to the United States, and expects to be separated from the service in a few days.——William D. Chapman, Capt., M. C., U. S. Army, Silvis, has returned from military service, and resumed practice.——Dr. William H. Conser, Lieut., M. C., U. S. Army, Cambridge, who has been in France for eight months, has been honorably discharged.

Illegal Practitioner Fined.—April 3, the Department of Registration and Education of the State of Illinois secured the conviction in the courts of Madison County of Reverend Davis, a colored man who was practicing medicine without a license. He was fined $115 and sent to jail to work this out. The business cards used by this man announced that he was "the world's greatest wonder; born with a full set of teeth; talked in ten days after birth; revealed to his father, who is now 107 years of age, that he would live to be 112 years old; revealing spiritualist and stomach guarder."

Chicago

Hospital to be Dedicated.—It is announced that the remodeled Mount Sinai Hospital, 1519 South California Avenue, will be formally dedicated, May 4.

Chicago Drugs Found in San Francisco.—Federal authorities, April 12, arrested a man in San Francisco in whose luggage, which had been checked through from Chicago, were discovered habit-forming drugs valued at $10,000.

Industrial Surgery Meeting.—April 15, the Illinois Manufacturers' Association held a dinner and discussion on industrial surgery in connection with the Chicago Safety Council. Dr. Loyal A. Shoudy, Bethlehem, Pa., chief surgeon of the South Bethlehem Steel Corporation, spoke on "Fifteen Functions of an Industrial Surgeon," and Paul B. Magnuson, medical director of the Industrial Commission of Illinois, on "The Present Deficiency of Surgical Treatment and After-Treatment of Accidents." Dr. Leroy P. Kuhn, chief surgeon of the Illinois Manufacturers' Casualty Association, presided.

Tuberculosis Society Meeting.—At the meeting of the Robert Koch Society for the Study of Tuberculosis, at the city club, April 22, at 8 p. m., the subjects for discussion are "The Relation of Dust to the Spread of Tuberculosis," by Dr. Henry C. Sweany, and "The Prevention of Relapses in Cases of Arrested Tuberculosis in Soldiers and Sailors," by Dr. S. Adolphus Knopf of New York, with demonstration of massotherapy, hydrotherapy and respiratory therapy on a subject.

Personal.—Dr. Orville W. McMichael, formerly director of the Edward Sanatorium, Naperville, and consulting director of the Rockford Municipal Sanitarium, and more recently medical director of the Winyah Sanatorium, Asheville, N. C., has severed his connection with the latter institution, and resumed private practice in Chicago.——Lewis Wine Bremerman, Lieut.-Col., M. C., U. S. Army, in command of the 310th Sanitary Train, American Expeditionary Force, arrived in New York from France, April 10.——Payson L. Nusbaum, Major, M. C., U. S. Army, in command of Base Hospital Unit No. 12, American Expeditionary Forces, arrived in New York, April 2.——Kellogg Speed, Major, M. C., U. S. Army, returned, April 11, after a long term of service on the western front.

MARYLAND

Personal.—John M. T. Finney, Brig.-Gen., U. S. Army, Dr. Hugh H. Young, formerly Colonel, U. S. Army, and Dr. William S. Thayer, formerly Brig.-Gen., U. S. Army, Baltimore, were given the Distinguished Service Medal by Secretary of War Newton D. Baker, for exceptionally meritorious and distinguished service.——Dr. Clement A. Penrose, who has been ill at his residence in Baltimore, is slowly convalescing. While in France, Dr. Penrose was seriously ill with septic poisoning, and his present condition is the result of the poisoning.

Clinic for Women.—In line with the lectures on motherhood, which are being given in Baltimore by Dr. J. Whitridge Williams, Baltimore, in connection with the School of Hygiene and Public Health, a clinic for women will be organized at the Johns Hopkins Hospital sometime within the year. The clinic now in use there has about seventy beds; the new clinic will have 150. This has been made possible by an anonymous gift from a woman of $400,000 to be used for the building. The teaching staff and equipment will be supplied by the General Education Board. The second of the motherhood lectures given by Dr. Williams and sponsored by the Women's Section of the Maryland Council of Defense was held, April 10, at McCoy Hall, and dealt with "Reproduction and Heredity." The need not only for these lectures but also for the women's clinic is demonstrated by the report of the Federal Children's Bureau on maternal mortality, in which it is shown that annually about 15,000 women die in childbirth in this country whose deaths might have been prevented by proper care.

MASSACHUSETTS

School for Physicians to Open.—The opening of the "School for Doctors," under the direction of Drs. Richard C. and Hugh Cabot is announced at the Massachusetts General Hospital by Dr. Joseph B. Howland. Clinical and pathological conferences will be held every Tuesday from 12 to 1.

Putnam Memorial Professorship.—An effort is being made to raise $50,000, of which more than half has already been pledged, for the endowment of a professorship of diseases of the nervous system, in memory of Dr. James Jackson Putnam, Boston, who inaugurated the neurologic clinic at the Massachusetts General Hospital in 1872, and who devoted more than forty years of service to its interests and to teaching in Harvard University Medical School. In 1893, Dr. Putnam was appointed the first professor of diseases of the nervous system, but the chair was then, and is still, without endowment.

Personal.—Dr. Eoline B. C. DuBois, Springfield, has returned after a year of service, and resumed practice.——Dr. Samuel W. Ellsworth, after service in France, has been reinstated in his position in the roentgen-ray service at the Boston City Hospital, and Dr. Patrick F. Butler has been reassigned as assistant physician in this department.——Frederic A. Washburn, Lieut.-Col., M. C., U. S. Army, organizer of Massachusetts General Hospital Unit, which operated at Base Hospital No. 6, Bordeaux, has returned from France.——Dr. Horace D. Arnold, Boston, has resigned as director of the Graduate School of Medicine of Harvard University.

MINNESOTA

Y. W. C. A. Given Mayo Home.—Dr. and Mrs. Charles H. Mayo have presented their town house in Rochester to the Young Women's Christian Association of the city.

Clinical Association Organized.—At a meeting of thirty-seven physicians and interns of the medical staff of the Minneapolis City Hospital, March 28, a constitution and by-laws were adopted. At the next meeting, April 25, a scientific program will be presented.

Public Health Nurses Now Available.—The bill authorizing city and village councils, boards of county commissioners, and town boards to employ public health nurses has passed both houses of the legislature. Under directions of this bill, public health nurses are now legally available throughout the state.

Personal.—Clarence C. Burlingame, Major, M. C., U. S. Army, Fergus Falls, formerly on the staff of the state hospital, has been decorated by the Polish government.——Charles R. Ball, Lieut., M. C., U. S. Army, St. Paul, who has been on duty at American Red Cross Hospital No. 1, Paris, since September, 1918, has returned home.——Dr. Gustav A. Renz, assistant chief city health officer of St. Paul, is reported to be seriously ill with malignant disease of the mouth and throat.

MISSOURI

State Association Meeting.—The annual meeting of the Missouri State Medical Association will be held at Excelsior Springs, May 26 to 28, with headquarters at the Elms Hotel.

Fordyce in St. Louis.—At a meeting of the St. Louis Medical Society, April 12, a paper was read by Dr. John A. Fordyce, New York, professor of dermatology and syphilology in the College of Physicians and Surgeons in the City of New York, on "The Results Obtained in the Treatment of Neurosyphilis by Intraspinal Injections."

Personal.—Arthur Gundlach, Capt., M. C., U. S. Army, St. Louis, who was secretary of the St. Louis Medical Society when he accepted a commission in the Medical Corps of the Army, has been honorably discharged and has returned.——Dr. Albert F. Koetter, who has been acting as secretary in Dr. Gundlach's absence, resigned on Dr. Gundlach's return and the council thereupon reelected Dr. Gundlach secretary.——Dr. Dora Green Wilson, Kansas City, sustained a fracture of the left clavicle, March 17, in a collision between her motorcar and a street car.

NEW JERSEY

Tuberculosis Clinic Opens.—The antituberculosis clinic at 82½ Lexington Avenue, Passaic, was opened to the public, April 8. The rooms are to be open every Tuesday and Friday from 3 to 5 p. m., and are in charge of Dr. Joseph F. A. Rubacky.

Marriage Examination Law.—Under bills passed in the House, April 8, a physician's certificate becomes a prerequisite to marriage in New Jersey. The purpose of the bill is to prevent the marriage of persons afflicted with contagious or infectious social diseases. The bill provides that the fee of a physician for making the necessary examination before the issuance of a certificate shall not exceed $2.50, and county physicians will be required to make such examinations gratuitously to indigent applicants. The bill was indorsed by the officials of the U. S. Public Health Service and the state department of health, and was approved by the Surgeon-Generals of the Army and Navy.

NEW MEXICO

Personal.—Dr. James F. Chalmers, East Las Vegas, has resumed charge of the Santa Fe Railway System Hospital at Fort Madison, succeeding Dr. Bishop, who has been transferred to Topeka, Kan.

Governor's Signature Alone Required.—The public health bill has become practically a reality, lacking only the governor's approval. The house bill was passed by the senate, March 13, with a large number of amendments in which the house concurred, March 14.

Medical B[illegible].—The governor, March 22, appointed th[illegible] of medical examiners for the state: Drs. Miguel F. Desmarais, Las Vegas; Charles B. Kohlhousen, Raton; Creighton H. Ferguson, Tucumcari; John A. Reidy, Albuquerque; Robert E. McBride, Las Cruces; Carey B. Elliott, Dawson, and Jose M. Diaz, Santa Fe.

NEW YORK

Medical Club Meeting.—At the annual meeting of the Utica Medical Club, March 20, Dr. Hyzer W. Jones was elected president, and Dr. Arthur M. Johnston, secretary-treasurer.

Clinic Opens.—A free medical clinic under the auspices of the Geneva Board of Health was opened, March 27, in the board of health rooms in the city hall under the charge of Dr. F. Lansing Stebbins. The clinic will be open every Thursday afternoon until further notice, and all children in the city under 16 years of age are requested to visit the clinic and be examined.

Public Health Nurse Preparation.—Under the auspices of the New York State Department of Health, with the cooperation of the Rochester Health Bureau, Rochester Tuberculosis Association and the Monroe County Red Cross branches, a course of study in public health nurse preparation is being given this month at the University of Rochester, under the direction of Dr. Bertis R. Wakeman, Hornell, sanitary supervisor of the New York State Department of Health.

Personal.—Dr. Paul G. Taddikin, superintendent of the Buffalo State Hospital, has resigned to become superintendent of the Ogdensburg State Hospital.——Dr. Fowler A. Watters, health officer and city physician of Lockport, for twelve years past, has resigned, and Dr. Thomas E. Spalding, Lockport, has been appointed to fill the unexpired term.——Michael J. Thornton, Major, M. C., U. S. Army, Albany, has been promoted to Lieutenant-Colonel, M. C., U. S. Army, and has returned from abroad.——Dr. Milton P. Messinger, Oakfield, who has been on duty with the American Red Cross in France since October, has returned home.——Milton Chapman, Capt., M. C., U. S. Army, Rochester, who was on duty with the 42d Field Artillery on the western front, has returned and will resume practice.

New York City

Surgical Society Elects.—At its annual meeting, April 9, the New York Surgical Society elected Dr. William A. Downes, president; Dr. John A. Hartwell, vice president, and Dr. Ransom S. Hooker, secretary.

New Hospital for Drug Addicts.—A new hospital, recently established by the health department on North Brother Island, will be devoted to the treatment of drug addicts. The hospital has a capacity of 200 beds, and will receive patients committed by the courts as well as self-committed persons who desire to be cured of the drug habit.

Personal.—Robert Emery Brennan, P. A. Surg., U. S. Navy, has been given an honorable discharge.——Dr. Joseph A. Blake, formerly surgeon of the American Hospital at Neuilly, near Paris, sails for New York, April 19.——Dr. Irving F. Wallace, in charge of the maternity school at Bellevue Hospital, has resigned and will resume practice.——Dr. William L. Wolfson, Brooklyn, announces his return from France and resumption of practice, April 13.——Dr. Laura M. Riegelman, Brooklyn, has been placed in charge of the bureau of child hygiene for the department of health of Brooklyn, replacing Dr. John H. Plath.——Dr. David S. Flynn has been appointed director of the state employment bureau.

NORTH CAROLINA

Student Nurses Strike.—After sending in a petition to the trustees for better food, higher wages and more privileges, twenty-two student nurses of the Rex Hospital, Raleigh, quit the institution on strike.

Memorial to Nurses.—Patriotic citizens of Raleigh have arranged for a memorial to the volunteer nurses who cared for the sick during the recent influenza pandemic. For this memorial it is proposed that two public drinking fountains be erected.

Full-Time Health Officer.—Vance County has recently made arrangements to have a full-time health officer, arranging with the state board of health and the International Sanitary Commission for an intensive health campaign. There will be an office assistant to the health officer, and a nurse for rural sanitation and infant hygiene work. Forsythe, Davidson, Lenoir, Pitt, Robeson, Rowan, Nash, Northampton and Wilson counties are each now operating similar intensive health plants. The average typhoid fever deaths in the nine counties from 1914 to 1917 was 120 per year, with a death rate of 35.2. During 1918 there were only twenty-four deaths from typhoid in the nine counties, the rate being 7.8. During the war the whole-time health work was suspended in Vance County.

PENNSYLVANIA

Officers Return from Abroad.—John W. Burkett, Lieut., M. C., U. S. Army, Moon Run, and John F. Golden and Robert T. Hood, Lieuts., M. C., U. S. Army, Pittsburgh, have returned from abroad.

Three Years' Accidents Cost $30,000,000.—Nearly $30,000,000 have been awarded in three years under the provisions of the workmen's compensation act for the injured and families of those killed at their work. In three years, 6,668,348 accidents show that labor casualties furnish a startling comparison with those on the battlefield. The fatalities for the period reached 9,143.

To Improve Sanatoriums.—Extensive improvements are planned for the state's three tuberculosis sanatoriums at Mont Alto, Crescent and Hamburg, carrying on to a still greater efficiency the work done by the late Dr. Dixon. Plans have been drawn by the present commissioners of the health department for alterations and improvements at the three institutions which will cost approximately $300,000 for Mont Alto and $100,000 each for Crescent and Hamburg.

Physicians and Industries Get Together.—The acting commissioner of labor and industries has offered the services of the state to enable industries and physicians and surgeons to get together, because of the numerous requests for information regarding opportunities for industrial service in Pennsylvania which are being received from medical officers discharged from the military service. This feature of the state work is in the hands of Dr. Francis D. Patterson, Harrisburg, chief of the Bureau of Hygiene.

Philadelphia

Reception for Surgeon-General.—A reception was held by the Medical Club of Philadelphia for Major-Gen. Merritte W. Ireland, M. C., U. S. A., at the Bellevue-Stratford, April 18. Major William Keen, M.D., LL.D., was elected to honorary membership in the club.

Schools Insanitary.—According to the annual summary of investigation of schools submitted by Dr. Bernard Kohn, acting director of medical inspection of public schools, 101 schools are enumerated, as overcrowded, 75 lack sufficient illumination, 90 have inadequate yard space, 64 are deficient in exits and fire escapes, and 26 are insufficiently equipped with drinking water accommodations.

Gift to a Hospital.—A new maternity building to take the present site of the Smith Memorial Hospital of the Lankenau Institution and to cost about $125,000 has been donated by Charles H. Smith, a brother to the president of the Lankenau Hospital. The proposed new building will have a greater capacity than the one now in use, and while there will be several private rooms the donor will permit the construction of the building only with the definite assurance that it will be used entirely for poor women.

Personal.—Dr. Alexander C. Abbott, professor of hygiene at the University of Pennsylvania, and in charge of sanitary supervision for the Second Army, American Expeditionary Forces, has been promoted to colonel.——Walter A. Wood, Capt., M. C., U. S. Army, now in charge of the evacuation hospital at Coblenz, Germany, has been promoted to major.——Philip Atlee Sheaff, Major, M. C., U. S. Army, who has been with U. S. General Hospital No. 36, Detroit, as chief of the medical service, has been discharged and has returned to his practice in this city.——Lieut.-Col. Thomas H. Johnson, on duty with Base Hospital No. 29, University of Pennsylvania Unit, has been awarded the médaille d'honneur des épidémies by the French government.——Joshua E. Sweet, Major, M. C., U. S. Army, on duty with Base Hospital No. 10, has been promoted to lieutenant-colonel.——J. Chalmers DaCosta, Lieut.-Com., U. S. Navy, sailed on the *George Washington,* April 11, for France.

VIRGINIA

Personal.—Dr. William S. Keister, Roanoke, has been in conference with the state health officer of Alabama and is considering the acceptance of the position of field director of sanitation. This will include the charge of the five units cooperating with the International Health Board. Dr. Keister recently returned after ten months' service with the American Expeditionary Forces.

Must Report Vital Statistics.—The state board of health has served notice that all physicians and undertakers who fail to report vital statistics or fail to secure burial permits will be prosecuted. Dr. Oscar E. Bevins, Dungannon, is said to have pleaded guilty recently to the charge of failure to report three births, and was fined $5 on each offense. An undertaker of Broadway was fined on each of three charges of failure to report deaths and failure to secure burial permits.

CANADA

University Principal Resigns.—Principal Sir William Peterson of McGill University, Montreal, has resigned, and Sir Auckland C. Geddes, formerly professor of anatomy, has been appointed to succeed him.

Smallpox in Quebec.—Dr. Elzéar Pelletier, Montreal, of the provincial board of health of Quebec, reports an unusual number of cases of smallpox throughout that province. Fifty localities are affected, and there are more than 400 cases in the province. There are 1,200 municipalities in Quebec province, and 716 have adopted a resolution to establish compulsory vaccination. Some parishes in the neighborhood of Montreal are affected, and the provincial board of health has been made a center to direct the campaign against the incipient epidemic.

LATIN AMERICA

Workmen's Compensation.—Recently enacted legislation, officially promulgated by the vice president of Brazil by decree of Jan. 15, 1919, provides compensation for workmen killed or injured in the performance of labor or contracting disease in the performance of such labor, the laborer, his family or his heirs being entitled to receive such compensation from the employer.

GENERAL

Gorgas en Route to Ecuador.—Major-General William C. Gorgas, former Surgeon-General of the Army, and a party of sanitary experts arrived in Panama, April 3, and left April 7, for Guayaquil, Ecuador, to investigate sanitary conditions in that place and country.

Encephalitis.—This disease has appeared at the following places, among others, since April 1: Wallace, N. C.; Des Moines and Emmettsburg, Iowa; Chicago and Aurora, Ill.; St. Joe, Mich.; La Crosse, Wis.; Fargo, N. D.; Kansas City, Mo.; New Orleans, Alexandria and Lake Charles, La., and Birmingham, Ala.

Transportation of Sick and Wounded.—During March, 20,080 patients were transferred by the evacuation officer at Hoboken, N. J., to hospitals in various parts of the country, and these transfers were made from debarkation hospitals without a single accident. March 29, a hospital train left Hoboken with 2,011 patients, the largest record for transporting sick and wounded for a single day.

Personal.—Miss Lucy Minnegero, Fairfax, Va., chief nurse of the American Red Cross Unit, which was sent to Kief, Russia, in 1915, and later was superintendent of nurses at Columbia Hospital, Washington, D. C., and who since 1917, has been in charge of the preparation of the Red Cross nurses for assignment overseas, has been appointed superintendent of the U. S. Public Health Service Nurse Corps.

For a Campaign Against the Fly.—In the interest of a fly-killing and prevention campaign, the agricultural extension division of the International Harvester Company is distributing a pamphlet giving methods and materials for fighting the fly, and offers to lend charts and lantern slides for the use of persons or organizations in communities where fly-killing campaigns are to be conducted. The fly-breeding season is here, and efforts expended now will have the best results.

Funds Urged for Venereal Disease Control.—In a telegram sent out to state boards of health by the Surgeon-General of the U. S. Public Health Service, April 1, it was announced that the following sixteen states had already made appropriation for venereal disease control: Texas, Alabama, West Virginia, Maine, Washington, North Dakota, South Carolina, Delaware, New York, Utah, Wyoming, Oklahoma, Arizona, Oregon, Wisconsin and Iowa, and it was urged that the remaining states take immediate action to secure the federal aid available for this work.

Bequests and Donations.—The following bequests and donations have recently been announced:

Harvard Medical School, an anonymous donation of $50,000 for the establishment of the James C. Melvin fund for tropical medicine, the income to be used for research in medicine.

Hartley Laboratory, Columbia University, a gift of $2,000 by Mrs. Helen Hartley Jenkins.

For additions to the medical school buildings of the College of Physicians and Surgeons in the City of New York, a donation of $1,000 from Mrs. V. Everett Macy.

The German Hospital and Dispensary, Mount Sinai Hospital, Home for Aged and Infirm Hebrews, Montefiore Home for Chronic Diseases and Charity Organization Society of New York City, each $2,500; National Jewish Hospital, Denver, $2,500; Lebanon Hospital, St. Mark's Hospital for Deformities and Joint Diseases, and Mount Sinai Hospital Training School for Nurses, New York, each $1,000, and the United Hebrew Charities, $5,000, by the will of Emil Schweinburg.

FOREIGN

Personal.—Dr. T. A. Henry, superintendent of the laboratories of the Imperial Institute, London, has been appointed director of the Wellcome chemical laboratories.——Dr. F. L. Pyman has been appointed professor of technological chemistry in the Manchester Municipal College of Technology and the University of Manchester.——Dr. Janet Mary Campbell, London, has been appointed a medical officer of the British Local Medical Board with special charge of the work in respect to maternity and child hygiene.——Dr. George Barger, research chemist to the Medical Research Committee of the National Health Insurance, has been appointed to the chair of chemistry in connection with medicine at the University of Edinburgh.

Deaths in the Profession Abroad.—The *Nederlandsch Tijdschrift* reports the death of Dr. **F. Schauta**, professor of gynecology and obstetrics at the University of Vienna since 1891, aged 70. The list of his works and manuals on these specialties is a long one, but his name is best known, perhaps, by his advocacy of the vaginal route for operations on the uterus.——Dr. **E. W. Nordenson**, a leading Swedish ophthalmologist, prominent in public health work and in the work of the Swedish Medical Association. He was especially watchful over the character of the advertisements accepted for the publications of the association, including its monthly, *Hygiea*. His principal monographs were on detachment of the retina and on nervous diseases affecting vision. He had had a private eye clinic at Stockholm for nearly thirty years.——Dr. **F. Carriazo** of Seville, Spain, a specialist in radiology since 1897. In 1915 he had to have a finger amputated on account of a roentgen cancer and recently succumbed to the effects of its generalization.

CORRECTION

Child Welfare Congress to Be Held in Montevideo in May, 1919.—In our issue of February 15, Medical News section, we published an item taken from an exchange to the effect that the second Congreso Americano del Niño (Child Welfare Congress) which was to have been held at Montevideo, Uruguay, last December, had been postponed until May, 1920. In a cablegram just received from Dr. Luis Morquio of the above mentioned city, he states that the congress will be held in May of this year.

BUENOS AIRES LETTER

Buenos Aires, March 13, 1919

The Spanish Edition of The Journal

The edition in Spanish of The Journal of the American Medical Association is meeting with a most favorable welcome.

Entrance Examinations

The evident lowering of the standards of the secondary studies in recent years has impelled the Facultad de Medicina to insist on an entrance examination in physics, chemistry and natural sciences, in addition to the diploma of graduation which they have hitherto accepted as sufficient without necessity for further examination. The recent graduates of the national *colegios* have petitioned for the abrogation of these entrance examinations, insisting that the diploma of graduation should entitle them to admittance to the medical school. The latter, however, has legally the right to exact such examinations as it deems proper. The entrance examination was demanded by both professors and alumni on different occasions. One of the reasons which led to its adoption was the excessive number of matriculates in the first years of the medical course. Some of the courses had 800 inscribed which large number rendered practical instruction for all impossible. As 75 per cent. of the matriculates failed to conclude the course, it was deemed best to make a selection from the beginning and avoid the drawbacks of carrying a large number of students who are wasting their time in studies they will be unable to complete.

Opening of the Medical School Year

The school year will be officially inaugurated, March 20, in the Facultad de Medicina with a solemn session, the dean, Dr. J. Mendez, presiding. The classic date for opening the school has always hitherto been March 15, and the opening occurred without any ceremonies.

Epidemics in Northern Argentina

The epidemic of plague which has been prevailing in certain districts of the Jujuy and Salta provinces has declined. The death rate has been considerable as very acute cases and the septicemic forms were frequent. New cases of exanthematous typhus have appeared in the province of Jujuy, especially at Tilcara. The cases are isolated, which is not surprising as the zone affected is mountainous and the population scanty.

There has been a recrudescence of malaria. The Dapartamento Nacional de Higiene has organized anew the sections for defense against malaria. These sections had been reduced or suppressed entirely in the last few years. Complaints are being received as to an insufficient supply of quinin.

Reorganization of the National Public Health Service

In February the reorganization of the Bacteriologic Institute of the Departamento Nacional de Higiene was officially approved. The technical personnel were declared in commission about a year ago. Most of the personnel have been confirmed in their appointments but the new assistants were appointed directly, without any competitive examination such as has always been the rule hitherto.

Funds for the Public Hospitals and Charity Work

A subscription was recently collected to increase the funds available for the Asistencia Publica of the capital; the amount collected has not yet been made public.

At the time of the carnival festivities, the Asistencia Publica also was authorized to organize a festival in the Avenida de Mayo, that is, in the principal avenue of the city; the sums realized therefrom to be devoted to the city hospitals. The festival was a success, but owing to inefficient management of the entrance payments, the sum realized amounted only to $8,000.

LONDON LETTER

London, March 27, 1919.

The Influenza Epidemic

The third wave of the influenza epidemic has now ended. The deaths from the disease recorded for the *ninety-six* great towns of England and Wales last week numbered 3,218, compared with 3,889 the previous week. In London the deaths numbered 597, as against 808. The mysterious periodicity which the disease seems to have established for itself has been maintained. This periodicity is roughly twelve weeks. The first wave began in July and died down about the end of August—a two months' course. Twelve weeks after the beginning of the first wave—at the beginning of October—the second wave began to flow. This wave was spent by the middle of December. Again twelve weeks after the beginning of the second wave, that is, in January, the third wave appeared. It had begun to spend itself in the first days of March. If this periodicity is continued we may look for a fourth wave, beginning some time in April and ending about the first week in June.

Medical Graduate Course in London

Further particulars of the medical graduate course in London (The Journal, March 8, p. 742) may be given. Arrangements have been made with all the medical hospital schools, two other general hospitals, and the following special hospitals: Cancer, Chelsea Hospital for Women, Hospital for Children, National Hospital for Diseases of the Heart, National Hospital for the Paralysed and Epileptic, Queen's Hospital for Children, Hackney Road, St. Mark's Hospital for Diseases of the Rectum, St. Peter's Hospital for Urinary Diseases. Arrangements are being made for a definite course of daily lectures and demonstrations on special subjects at the Royal Society of Medicine. Graduate instruction has received a great stimulus from the large number of physicians in the armies of the dominions and the United States who are taking the opportunity while in Europe of profiting by their sojourn here. In the case of the dominion armies, special leave for three months for this purpose is granted to medical officers. For many years, attempts have been made to put graduate teaching in London on a satisfactory basis but, as stated in previous letters, without success. A new spirit has been awakened since the war, and it is recognized that the impossibility of resorting to the German schools for some years to come furnishes a great opportunity. A public meeting is about to be held in London under the chairmanship of Sir William Osler when a scheme, which has received the approval of the London medical schools, will be considered. It is proposed that the instruction shall comprise general and special courses, and that after attending one of the latter a graduate may apply to the teacher responsible for the courses for permission to do research work under him or to act as his clinical assistant. Thus after attending a course on children's diseases of orthopedics he could, if regarded as sufficiently qualified, stay on at the hospital as clinical assistant, or do research under the physician for children's diseases or the orthopedic surgeon. Those who have given graduate instruction in the London graduate schools and special hospitals in the past will continue to do so in cooperation with the other teaching institutions working with the association, which include all the undergraduate medical schools in London. The medical schools of the United Kingdom will be invited to cooperate with the London association in providing periodic courses to run concurrently, especially at times, such as the summer months, when those seeking to attend courses will probably exceed the number that can be dealt with adequately in London. The recently formed British Association of Radiology and Physiotherapy has agreed to cooperate.

Birth Control

In view of the fact, mentioned in my last letter, that in the last quarter there were in England and Wales 79,443 more deaths than births, special interest attaches to the meeting of the National Birth Rate Commission (instituted by the National Council of Public Morals). Dr. C. K. Millard, health officer for Leicester, dealing with the declining birth rate, said that the question of the birth rate was intimately bound up with that of birth control. It was unfortunate that scientific study of the subject had been hitherto neglected. Owing to the supposed moral stigma many had tabued it, and it was only quite recently that unbiased discussion had become possible. The subject was of special interest and importance at the present day, through conditions arising out of the war. In many parts of Europe the social conditions of the people, with starvation staring them in the face, without proper clothing or shelter, with civilization itself breaking down, were deplorable in the extreme. It appeared to him eminently desirable that rigid birth control should be practiced in those countries, and probably in others also, if acute maternal suffering and terrible infant mortality were to be avoided. The best thing for the people of those countries to do was temporarily to stop having children, so far as it could be avoided, until happier and more prosperous times arrived. It seemed to have been taken for granted in most countries that rapid increase of population was needed in the national interest, and that a stationary population would be disastrous. No doubt this sentiment was really based on militarist considerations, and in the past, when such considerations were vital, it might have been wise to encourage it. But now, with the international situation fundamentally altered, and with the League of Nations (whose special function it would be to safeguard the nations with small populations), it was time to reconsider our attitude. International competition in birth rates was to be avoided, just as was competition in armaments. There were certain countries which were already "saturated" as regards population, in the sense that any further increase would not tend to increase the happiness or prosperity of the inhabitants. Wherever that point had arrived, or was nearly at hand, he regarded birth control as the proper remedy, and as greatly preferable, in most cases, to emigration. The case of our own country was complicated by the fact that she was the mother country of an empire. Many people would agree that the population of the British Isles was large enough, but they wanted to see our great colonies filled up with an all British population. No doubt this was very patriotic, from the standpoint of conditions before the war; but from the point of view of the League of Nations we ought to regard our colonies as the natural outlet for the surplus population of all European countries. It was so necessary for the peace of Europe that such an outlet should exist that we need not be in any hurry to see those territories filled up. As to the question of practical methods, physicians had not given it sufficient attention to enable them to speak very authoritatively. Certain physicians, with obviously a strong bias on moral grounds, had condemned all methods as highly injurious, and the bishops in the special report on this subject presented to the Pan-Anglican Conference in 1908, had seized on isolated medical opinion of this kind and used it as though it were the considered verdict of the medical profession. To ascertain what was the real opinion of the profession of the present day, Dr. Millard had recently issued a questionnaire to medical practitioners, and from some eighty replies received he was quite satisfied that the great majority of the profession did not regard birth control as necessarily injurious.

The Venereal Danger to the Troops of the Occupied Area

Attention has been called in the press to the venereal danger to which the British troops, largely young soldiers, are exposed in the occupied portion of Germany. The Germans took elaborate precautions for the health of their troops in town areas, and on the whole were successful. They isolated and kept under surveillance all women suffering from contagious diseases; but when it became known that the Allied troops were to occupy the town, these women were released. A German official interrogated on the subject said that they had "escaped." Many of their towns, among which Cologne has a certain notoriety, have proved hotbeds of disease, and there is some reason to believe that pains have been taken in a manner not infrequently adopted by conquered people in the East to endanger our troops. It is reported that since the occupation, venereal disease has become much more prevalent among them. The government has been asked to take the requisite precautions.

PARIS LETTER

Paris, March 13, 1919.

An American Hospital to Be Established in France

Colonel House has informed M. André Tardieu, general commissioner of Franco-American War Welfare, of the project to create in Paris a hospital to be built by Americans in commemoration of soldiers of the United States who died in France during the war. This matter was submitted to Colonel House by Dr. Kenneth Taylor who, during the four years of the war, has devoted himself particularly to the question of hospitalization in France, and is now director of an American Red Cross Hospital, No. 2 rue de Puccini, Paris. This institution would care for French and Allied patients, and would also strengthen the union between French and American medical men, by giving courses teaching American medical students French methods, and demonstrating American methods in the clinics which would be open to French students. This hospital would be a center of French and American documentation and would serve likewise as a training school for French and American nurses.

Compulsory Notification of Tuberculosis

This question was discussed recently by the Académie de médecine. Dr. F. Bezançon, professor of bacteriology in the Paris medical faculty, presented the report of the Commission permanente de la tuberculose. The conclusions on which the discussion hinged were as follows: "The Commission permanente de la tuberculose is of opinion that compulsory notification is one of the fundamentals in the campaign against tuberculosis, but that it is merely one phase of the work; the campaign against alcoholism and against insanitary dwellings should likewise command the attention of legislators. The attending physician should register the case, and by making the notification to the health officer, he does not violate professional secrecy. This does not preclude notification by the party most interested or by the head of the family. Notification should be limited to open cases of pulmonary tuberculosis, and it should not be enforced until the prophylactic measures and necessary assistance can be realized. The committee seizes this occasion to request that the Académie vote a resolution asking for the creation of an Institut national d'hygiène for the purpose of promoting hygiene and training competent hygienists."

This subject was also discussed by the Société médicale des hôpitaux de Paris. Dr. Emile Sergent would restrict notification at present to the open cases of pulmonary tuberculosis, cases in which the diagnosis is confirmed by demonstrating the tubercle bacillus in the sputum, such bacteriologic examination to be made in a reliable laboratory and to be accepted only when two successive examinations have been positive.

Dr. Dufour would register not only the open cases of pulmonary tuberculosis, but all cases of suppurating tuberculosis, of bone, for example, which may spread contagion.

He is strongly opposed to requiring bacteriologic proof based on special laboratory examination, but would hold the attending physician responsible.

Dr. Guinon believes that to demand the finding of the tubercle bacillus will leave unregistered many cases of tuberculosis.

Dr. H. Méry did not agree with these statements at all. They would require the notification even of cases of tracheobronchial gland tuberculosis. He would register all cases of contagious tuberculosis. This would exclude from the schools all teachers who are contagiously tuberculous.

Drs. Béclère, Brocq and Milian would provide the means for fighting the disease first, before insisting on compulsory notification.

Dr. Crouzon recalled that the war has compelled compulsory notification in the army with all its consequences of care for the sick, before and after their discharge from the army, and has resulted in creating an organization to fight the disease. The proposed law for compulsory notification of tuberculosis provides for an allowance to the families, and asks for an appropriation of 84 million francs to build hospitals, dispensaries, sanatoriums, disinfection centers, etc., and for the annual expense of maintenance. Crouzon believes, therefore, that under these conditions the principle of declaration cannot be rejected.

Dr. Armand-Delille, former chef de clinique in the Paris medical faculty, was of the opinion that such notification would be of great educational value to the public, but that it should be limited to cases of open pulmonary tuberculosis, because cases of open surgical tuberculosis do not spread bacilli much. Among 180,000 repatriates whom he examined at Evian he found about 1,400 cases of tuberculosis, in 30 per cent. of which tubercle bacilli were found. He concluded, therefore, that there are not more than 100,000 tuberculous individuals in France whose disease is contagious. He regards the present as a favorable time for notification because many buildings and measures installed by the Service de Santé militaire are now available for use in the campaign against tuberculosis.

Bezançon was formerly opposed to compulsory notification, but he is now an ardent advocate of this measure. This is because, along with the notification, many measures of great value are now being proposed. At the Conseil général de la Seine, the Office publique de lutte antituberculeuse is now engaged in the planning of dispensaries, hospitals and sanatoriums for the isolation and treatment of the tuberculous; in child welfare work; the establishment of school colonies; the campaign against slums, providing clean, sanitary homes, etc. What are the objections to this measure? It cannot prove objectionable to the family, because the notification will be made only to the sanitary inspector and he will order proper measures to be taken only if the family itself cannot provide the means to effect them. The attending physician should always state on the notification slip that the proper precautions have been taken, when this is so.

Dr. Carnot and Dr. Barbier, on the other hand, are opposed to this new measure believing that it will end only in failure.

American Red Cross Gives a Sanatorium

Miss E. Hoyt, secretary of the Commission de la Croix Rouge américaine in France, and Major A. H. Garvin, chef du Bureau de la tuberculose, have advised M. Autrand, prefect of the département de la Seine, that the American Red Cross, wishing to give evidence of its sympathy with the work of the Office publique d'hygiène sociale, and its great appreciation of the organization of the campaign against tuberculosis in the département de la Seine, will donate to the département for the use of this commission the sanatorium at Yerres (département de Seine-et-Oise).

M. Autrand expressed his heartfelt thanks for this generous act which again shows the valuable assistance which has been rendered to the sick, wounded and unfortunate French by the American Red Cross.

Personal

Dr. C. Achard, professor of pathology and general therapeutics in the Paris medical faculty, has been named professor of clinical medicine at his request. Dr. Cluzet, professor of medical physics in the Lyons medical faculty, has been named professor of physics, biology, radiology and physiotherapy.

Dr. Vincent, medical inspector and director of the laboratory of antityphoid vaccination and of serotherapy for the army, has been named inspector of the hygienic and epidemiologic services of the army, while still retaining his present activities.

Deaths

Joseph Ephraim Sawtell ⊕ Kansas City, Kan.; College of Physicians and Surgeons, Baltimore, 1886; aged 59; also a member of the Kansas Medical Society; professor of rhinology and otolaryngology in the University of Kansas, Lawrence; president of the Kansas State Medical Society in 1907-1908; for several terms president of the Wyandotte County Medical Society; formerly a member of the State Board of Medical Examination and Registration; a member of the staff of St. Margaret's, Bethany, Belle Memorial, Christian, and St. Joseph's hospitals; died at his home, April 4, from pneumonia.

Russell Cisney Parson ⊕ **Capt., M. C., U. S. Army,** Ambridge, Pa.; Jefferson Medical College, 1914; aged 27; who entered the service, Aug. 15, 1917; and after a special course in roentgenology, and tours of duty at Fort McHenry, Md., and Camp Gordon, Ga., was sent overseas with Evacuation Unit No. 13, and served as roentgenologist in the Toul Sector until December, when he was transferred to Camp Hospital No. 91 at Le Banle; died at that place, March 1, from epidemic lethargic encephalitis.

Lyman Henry Hills, Binghamton, N. Y.; New York University, New York City, 1863; aged 81; a member of the Medical Society of the State of New York; in 1870 president of the Otsego County Medical Society, and in 1899 president of the Binghamton Academy of Medicine; consulting physician to the Binghamton City Hospital; for several years a member of the local board of education, and for two terms coroner of Broome County; died at his home, March 21.

William Henry Comegys, Col., U. S. Army (retired), New York City; Miami Medical College, Cincinnati, 1876; aged 66; who entered the Army as an acting assistant surgeon in 1879 and served in the Geronimo campaign; and in 1881 was appointed major and paymaster, serving in that department until 1911, when he was retired at his own request after more than thirty years of service; died in the Presbyterian Hospital, New York City, March 31.

Francis Joseph Duffey ⊕ **Lieut.-Col., M. C., U. S. Army,** Brooklyn; Long Island College Hospital, Brooklyn, 1896; aged 44; a member of the New York Academy of Medicine; who recently returned from service with the American Expeditionary Forces in France; assistant visiting physician to the Post-Graduate Hospital and the Neurological Institute; died, March 31, from heart disease, while in attendance on a patient in Manhattan.

William Elton Guthrie ⊕ Bloomington, Ill.; Rush Medical College, 1881; aged 61; a specialist in surgery; local surgeon of the Chicago and Alton, and Lake Erie and Western railroads; once president of the Illinois State Medical Society; died in the Presbyterian Hospital, Chicago, April 6, a week after an ileostomy had been performed to relieve intestinal obstruction due to malignant disease.

James Harvey Wright ⊕ Pittsburgh; University of Buffalo, N. Y., 1878; aged 70; for several years city physician of Allegheny; a member of the staff of the Allegheny General Hospital since its organization; consulting physician to St. John's General Hospital; died in the West Penn Hospital, Pittsburgh, March 25, after a surgical operation.

Louis-Edouard Desjardins, Montreal, Que.; Ecole de médecine et de chirurgie, Montreal, 1864; Toronto School of Medicine, 1873; aged 81; who became professor of ophthalmology in his alma mater in 1882, and later was made professor emeritus; one of the pioneers of the French-Canadian medical institutions; died at his home, March 2.

Paul Herman Dernehl ⊕ Milwaukee; Johns Hopkins University, Baltimore, 1907; aged 40; a specialist in ophthalmology; a member of the American Academy of Ophthalmology and Oto-Laryngology, and a member of the staff of the Columbia, Children's and Mount Sinai hospitals, Milwaukee; died at his home, March 28, from diabetes.

John J. Hislop ⊕ **Capt., M. C., U. S. Army,** Miner's Mills, Pa.; Jefferson Medical College, 1892; aged 53; who entered the Army, Aug. 27, 1917, and after serving at Camp Wheeler, Macon, Ga., was discharged on account of physical disability, Dec. 10, 1918; died at his home, March 5, from cardiorenal disease.

Austin B. Allen ⊕ Maryville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 69; a specialist in pediatrics; a member of the staff of Ensworth Hospital, St.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph, Mo.; examining surgeon to the Omaha and St. Louis Railroad; died at his home, March 24, from arteriosclerosis.

William J. Andrews, Lakeside, Ohio; Medical College of Ohio, Cincinnati, 1865; aged 75; surgeon of U. S. Volunteers throughout the Civil War; a charter member of the Delaware County (Ind.) Medical Society; died in the Scarlet Oaks Sanitarium, Clifton, Cincinnati, March 26.

William Latimer Hall ⊕ **Lieut., M. C., U. S. Army**, Freedom, Okla.; Emory University, Atlanta, Ga., 1915; aged 29; who entered the United States service, June 1, 1918, and was sent to France, November 5; died in Marseilles, France, February 10, from bronchial pneumonia.

John R. Smith, Cleveland; Western Reserve University, Cleveland, 1879; aged 64; for several years professor of materia medica in his alma mater, and for three years house physician of Lakeside Hospital; died at his home, March 24, from cerebral hemorrhage.

Mary Elizabeth DeLong Pope Westcott, Lansing, Mich.; New England Female Medical College, Boston, 1865; aged 86; for several years a member of the faculty of her alma mater; died at the home of her daughter in Lansing, March 27, from bronchitis.

Edwin Jackson Kibbe ⊕ Aurora, N. Y.; College of Physicians and Surgeons in the City of New York, 1906; aged 39; until recently superintendent of the Queen Alexandra Sanatorium, London, Ont.; died in Aurora, about March 29.

Bradner Earl Gorham ⊕ **Lieut., M. C., U. S. Army**, Kent, Ohio; Grand Rapids (Mich.) Medical College, 1903; aged 37; who recently returned from military service; died in Lakeside Hospital, Cleveland, March 26, from pneumonia.

William Hilt, Pensauken, N. J.; Jefferson Medical College, 1884; aged 72; for many years a reporter on Philadelphia newspapers, and assistant city editor of the Philadelphia *Public Ledger;* died at his home, March 28.

Thomas Stratton Roberts, Long Beach, Calif.; Medical College of Ohio, Cincinnati, 1870; a member of the South Dakota State Medical Association; for many years a practitioner of Sioux Falls; died at his home, March 30.

William Beidler, Akron, Ohio; Medical University, Columbus, 1897; aged 51; a member of the Ohio State Medical Association; died at his home, March 28, from epidemic lethargic encephalitis following influenza.

David Clair Vosler ⊕ Ellwood City, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1894; aged 48; formerly captain, M. R. C., U. S. Army; died at his home, March 19, from organic heart disease.

John R. Absher, Foss, Okla.; University of Tennessee, Nashville, 1892; aged 62; was dragged by a cow he was leading, sustaining injuries as a result of which he died in the Clinton (Okla.) Hospital, March 27.

Eli Judson Peck, East Norwalk, Conn.; Bellevue Hospital Medical College, 1884; aged 70; for twenty-five years a practitioner of New York City; also a graduate in veterinary surgery; died at his home, April 3.

James Alexander Hutcheson, Lynbrook, N. Y.; Long Island College Hospital, 1874; aged 62; for several years health officer of Hempstead, L. I.; died at his home, March 30, from septic lymphadenitis.

George Edward Henderson ⊕ **Capt., M. C., U. S. Army**, Brooklyn; Long Island College Hospital, Brooklyn, 1907; aged 34; on duty with the 330th Field Artillery; died in France, February 12.

Cyrus Henry Pendleton, Hebron, Conn.; Western Reserve University, Cleveland, 1860; aged 88; a member of the Connecticut State Medical Society; died at his home, March 6, from heart disease.

Benjamin Fidler ⊕ New York City; Long Island College Hospital, Brooklyn, 1903; aged 47; radiotherapist and roentgenologist in the Mount Sinai Dispensary; died at his home, March 26.

Randall E. Poindexter, Benton, Ill.; Northwestern University Medical School, 1892; aged 56; local surgeon of the Illinois Central Railroad; died at his home, March 25, from heart disease.

George Willis Crosby ⊕ Sheboygan, Wis.; University of Michigan, Ann Arbor, 1884; aged 57; a specialist in genito-urinary diseases; died at his home, March 24, from cerebral hemorrhage.

Charles Milton Sawyer, National Soldiers' Home, Me.; Jefferson Medical College, 1872; aged 69; died in the National Soldiers' Home, February 11, from arteriosclerosis.

John Francis Abel ⊕ Chicago; Northwestern University Medical School, Chicago, 1879; aged 61; surgeon to the Southside Hospital; died at his home, April 3, from pleuropneumonia.

Charles Frederick Dole, Sharon, Mass.; Harvard University, Medical School, 1900; aged 43; a member of the Massachusetts Medical Society; died at his home, March 25, from paresis.

John Henry Bradsworth, Paterson, N. J.; New York Homeopathic medical College, New York City, 1881; aged 70; also a druggist; died at his home, March 20.

Simeon Otho Francis, White Bear Lake, Minn.; Minnesota Hospital College, Minneapolis, 1884; aged 58; died at his home, January 30, from cerebral hemorrhage.

Josiah Swinney, Bloomfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 61; once coroner of Davis County; died at his home, March 22.

Deborah K. Longshore, Topeka, Kan.; Woman's Medical College of Pennsylvania, Philadelphia, 1872; aged 77; died in Topeka, March 24; from heart disease.

Elton James Bassett, Taunton, Mass.; Harvard Medical School, 1869; aged 74; a member of the Massachusetts Medical Society; died at his home, March 16.

Noe Dumont, Little Falls, Minn.; Ecole de Médecine et de Chirurgie, Montreal, 1887; aged 56; health officer of Little Falls; died at his home, March 26.

Richard Henry Lawlor ⊕ Methuen, Mass.; Dartmouth Medical School, Hanover, N. H., 1898; aged 47; died at his home, February 12, from influenza.

Roy Oliver Thompson ⊕ Imperial, Calif.; College of Physicians and Surgeons, Los Angeles, 1914; aged 32; died in Imperial, March 25, from influenza.

Wade Hampton Sherrill, Philadelphia; Jefferson Medical College, 1916; aged 29; died at the home of his mother at Sherrill's Ford, N. C., March 25.

Bennie U. Spickard, Gem, Texas; University of Tennessee, Nashville, 1917; aged 40; died at his home, March 9, from pneumonia following influenza.

William Stark, Cincinnati; University of Berlin, Germany, 1858; aged 82; died at the home of his son in Cincinnati, March 9, from myocarditis.

Emanuel Sipes ⊕ Jacksonville, Ill.; Cincinnati College of Medicine and Surgery, 1887; aged 69; died at his home, March 1, from pneumonia.

Edward James O'Brien ⊕ Cheboygan, Mich.; Detroit Homeopathic College, 1910; aged 39; died in a hospital in Detroit, about March 26.

Lewis B. Griffith, Philadelphia; Hahnemann Medical College, Philadelphia, 1880; aged 61; died at his home, March 31, from heart disease.

Edward Stiles Allen ⊕ Providence, R. I.; Bellevue Hospital Medical College, 1876; aged 63; died at his home, March 29, from heart disease.

John Henry Pflueger, Holmen, Wis.; Starling Medical College, Columbus, Ohio, 1879; aged 65; died at his home, March 24, from heart disease.

Stanley F. Heskett, Chicago; College of Medicine (Physio-Medical), Chicago, 1887; aged 57; died at his home, March 29, from nephritis.

Marriages

William Ernest Kramer, Capt., M. C., U. S. Army, to Miss Kate Irene Peebles of Lawrenceville, Va., at Richmond, Va., March 26.

Leo Fleischer Stiendler, Capt., M. C., U. S. Army, Douglas, Ariz., to Miss Lucile Isabel Smith of San Antonio, Texas, March 8.

William Berry Marbury, Capt., M. C., U. S. Army, to Miss Violetta Carroll Mercer, both of Washington, D. C., April 2.

Burton James Lee, Lieut.-Col., M. C., U. S. Army, to Miss Louise Freeman, both of New York City, March 29.

Fritz Ernst Buchen, Wisdom, Mont., to Miss Frieda Louise Martini, at Butte, Mont., March 28.

Samuel Herman Lippitt to Dr. Eleänore Scholl Cushing, both of Milwaukee, April 7.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

GERMANY AND THE AMERICAN CHEMICAL INDUSTRY

Extracts from the Report of the Alien Property Custodian on the Chemical Industry

The average government report is notoriously dry and uninteresting. There are exceptions. The most recent of these exceptions is the chapter in the report of the Alien Property Custodian, A. Mitchell Palmer, recently made public which deals with "The Chemical Industry." This part of the report should be read by every man, physician and layman, who is interested in the larger industrial and scientific problems of the day, but especially should it be read by every physician.

At the outset, Mr. Palmer points out that the field of chemical industry was perhaps the most difficult of the many problems which his office was expected to solve. Chemical industry in the United States was saturated through and through by German influence, and in no branch of human endeavor was the myth of the German superman more firmly fixed in the public mind. The United States was flooded with chemists who were German either by origin, training or tradition. The chemical industry was certainly the most remunerative and probably the strongest of all Teutonic industries in the United States. The report briefly outlines the history of the German chemical industry. It shows how natural advantages and national characteristics combined to give Germany an advantage over the rest of the world.

GERMANY'S ADVANTAGES

"Labor was cheap, docile, and stable. On the other hand, the national habit of mind was peculiarly fitted for chemical research work, and particularly for the interminable tasks presented by such research, in the way of exhausting the immensely numerous possible combinations available within a particular field. From the first, scientific attainment, and particularly accomplishment in the field of research, appealed strongly to the public mind. Men of science, and particularly research workers, were more highly regarded than in other countries. This tendency was strongly fostered by the government, which, by conferring honors and titles, did everything possible to exalt the position of the successful scientist.

"As a consequence of these conditions, the universities were at an early date provided with the most elaborate and advanced equipment for research work, and attracted to themselves an extraordinary proportion of the ablest young men of the nation. They accordingly proceeded to turn out a constantly increasing number of highly trained technical men, whose services were available to the rising chemical industry. The number of these men was such that the inevitable competition between them for places made the average salaries exceedingly small. Highly skilled service was, therefore, available to the German chemical manufacturer at an extraordinarily low cost. In this respect he had a marked advantage over the manufacturers of any and every other country in the world."

These advantages did not give the German supremacy in the manufacture of what are known as "heavy chemicals," such as sulphuric acid, soda ash, etc. It did, however, give them an advantage, in fact it gave what was to all intents and purpose a world monopoly in two other great branches of chemical industry, which call for more difficult and complicated processes—that is, the practical application of organic chemistry to the manufacture of dye stuffs and medicinals. "The complexity of the manufacture of dye stuffs, as a business proposition," says the report, "is almost beyond belief." Nevertheless, over 900 distinct dyes were sold in logicciable quantities in the American market alone, before activities, each product requiring a separate and distinct process of manufacture, "one differing from the next in many cases as widely as if the products had been those of unrelated industries."

BY-PRODUCTS OF ECONOMIC AND POLITICAL VALUE

While all of these dye stuffs and many of these pharmaceuticals are derived from coal-tar, "they descend from this common ancestor by an enormous number of separate family lines." There are ten "crudes" which form the starting point of practically all the processes leading up to the production of dyes. From these ten there are more than 300 "intermediates" produced by more or less complex chemical reaction. While from the intermediates an almost infinite number of possible dye stuffs may be made.

The problem is, of course, largely restricted by the limitations of chemical laws. The most valuable of the modern dyes are derived from anthracene, obtained from the original coal-tar. The tar distiller, in producing anthracene, also produces or wastes enormously greater quantities of naphthalene, benzol and other crudes. The same principle obtains in subsequent steps of the complex processes of dye manufacture, whereby at each step large quantities of by-products are produced. The result is that the finished dye must either be sold at a tremendous price or else commercial uses must be found for the by-products. Some of these by-products have been found to have medicinal value, and have become established as pharmaceuticals.

"The most important feature, however, of this production of by-products is the relation which it bears to the explosive industry. All the most important explosives of the present day are either coal-tar products or the result of chemical processes requiring the use of coal-tar products. In a large dyestuff factory there is an unavoidable production of considerable quantities of substances which are directly available for conversion into explosives. A still more striking example is that of paramononitrotoluol. This is an intermediate necessarily made in quantities often beyond the needs of the dye makers. To the end of the last century many thousand tons of this substance had accumulated in the German dye works, which were making frantic efforts to find uses for it in dye making. About 1904 these efforts suddenly ceased. Trinitrotoluol (TNT) had been adopted as a military explosive, and every pound of the accumulation was directly available for easy conversion into this most formidable of high explosives."

GOVERNMENTAL SUBSIDIES

The report points out that three things were inevitable as the German dye industry developed. One was the necessity of immense resources in the way of capital and technic to carry out the business. The second, following as a result of the first, was that it was inevitable that large research laboratories must be maintained to work out the varied problems of disposing of by-products. The third was the government control of the dye industry because of its intimate relation with the explosive industry, and much was done by the German government "to insure the prosperity of the dye industry and its immediate convertibility to the production of munitions." This highly specialized industry, aided as it was by the government, led to overproduction, which in turn led to a determined effort to establish and maintain a large export trade.

KILLING AMERICAN INDUSTRIES

"The natural advantages of the German industry, as compared to the industry in other countries, prevented serious competition in Germany itself. The government's tariff and other policies enabled home prices to be kept up. It was then evidently to the advantage of any manufacturer to produce far more than he could sell in the home market, even if his export trade had to be carried on at a loss, when by so doing he could use a process so economical that his profits on home trade would be largely increased. Accordingly, German dyestuffs began to appear in every country at prices which domestic manufacturers could not meet. The inevitable result was that in country after country the domestic manufacture was destroyed or stifled in its cradle. As soon as this had been accomplished, it was no longer necessary for the German exporters to sell at or below cost. Prices were immediately raised and handsome profits realized. The tendency to this result was recognized by the German government from the first, and every facility was afforded to the growing export trade. It was fully realized by both the civil and military authorities that if a world monopoly in the dyestuff industry could be built up the military strength of Germany would be colossally enhanced, since it alone of all the great powers would then be in a position to secure immediate supplies of the vast quantities of munitions likely to be needed in modern war."

Specific instances of the German dumping policy are given in the report which shows, too, the way in which American manufacturers were forced to the wall. In addition to this, the Germans took advantage of the patent laws of the United States. "For example, Bayer alone accumulated in the neighborhood of 1,200 such patents which were placed in the hands of one of its subsidiary companies." In spite of the patents having been taken out, the German concerns made no effort, except in a few instances, to manufacture the products patented in the United States, showing that "these patents were obviously obtained and held in order to prevent the formation of an American dye industry and to make impossible importation from outer countries. The latter of these two purposes seems to have been the more important in the German mind. They seem to have had no fear that any American industry could be established on a competing basis."

GERMAN INDUSTRIAL FRIGHTFULNESS

The tactics thus described, while ruthless, were at least technically legal, but the report also shows that in addition to dumping and destructive underselling "the methods of the great German houses in carrying on their business in this country, were from the first, honeycombed with corruption." The head dyers in various mills and other important customers of the dye manufacturers were directly and indirectly subsidized. The Alien Property Custodian reports that this corruption was so extensive that he came across only one American consumer which had escaped its ill effects.

"This concern, the United Piece Dye-Works of Lodi, N. J., avoided the difficulty by having all its dyes purchased by the head of the company himself, under contracts providing that no barrel or package should show the name of the manufacturer. The company was thus able to designate the dyes which its dyers were to use solely by its own arbitrary numbers, and the dyers were thus unable to determine whose dyes they were using and to whom they should look for their graft."

In addition there appears to have been an organized propaganda intended to discourage American attempts to establish a dye industry in this country. "It seems to have been regarded as the duty of a good German chemist in the United States to preach the doctrine of the invincibility of the German chemical industry, the impossible difficulty of the processes involved in the manufacture of many important dyes, and the hopelessness of procuring the necessary technically trained men and skilled labor outside of Germany."

The result of all this was that up to August, 1914, the American industry in dyestuffs and medicinals consisted of little more than a series of rather small assembling plants. Although American manufacturers had from time to time attempted to make some of the various intermediates, the industry was killed almost at its inception by German price cutting. As a result, practically the entire American industry, small as it was, operated on German intermediates, and as such existed on the sufferance and was at the mercy of the German producers.

AMERICAN PHARMACEUTICAL HOUSES

"In medicinals very little real American manufacture existed. A few of the coal-tar pharmaceutical products were produced by two American houses in St. Louis, the Mallinckrodt Chemical Works and the Monsanto Chemical Works. By far the most important factor in this field, however, was the New York house of Merck & Co., which was a branch of the world-famous firm of E. Merck of Darmstadt, and has accordingly as such been taken over. The enormous dispensing and distributing business of such firms as Parke, Davis & Co., Lilly & Co., and Powers-Weightman-Rosengarten Co., successful and efficient as it was beyond comparison with similar businesses in any other country, seems to have involved very little real manufacture, and the materials used were largely imported. There seems to have been but little, if any, German interest in this branch of the industry, except among small brokers and dealers."

The vital character of the dye industry, says the report, is not due to its financial importance, although at the outbreak of the war these dyes were absolute essentials to industry, producing, perhaps, $2,500,000,000 worth of goods annually. Its real importance rests on "the fact that the technical skill and equipment provided by a successful dye industry furnished the means, and almost the sole means, to which every nation must look for advances in the application of chemical science to practical undertakings."

THE "BIG SIX"

Recording the fact that in the opening of the year 1914 nine tenths of the dyes used in American industry came from Germany and the bulk of them from the six huge German corporations which practically controlled the business, the report discusses, in interesting detail, the ramifications of the "Big Six" in American industrial life. The six firms were: (1) *Badische Anilin und Soda Fabrik*, Ludwigshafen on the Rhine, which the report for convenience briefly designates as "Badische"; (2) *Farbenfabriken vorm. Friedr. Bayer & Co*, in Leverkusen, shortened in the report to "Bayer"; (3) *Actien-Gesellschaft für Anilin-Fabrikation* in Berlin, abbreviated to "Berlin"; (4) *Farbwerke vorm. Meister Lucius & Bruning* in Hoechst-am-Main, briefly, "Hoechst"; (5) *Leopold Cassella, G.m.b.H.* in Frankfort, and (6) *Kalle & Co. Aktien-Gesellschaft* in Biebrich.

"At this time [January, 1914] each of these six giants was represented in this country by a subsidiary American corporation. The agent of "Bayer" was Bayer & Co. (Inc.), a New York corporation, while in the Synthetic Patents Co. (Inc.), another subsidiary, was vested the ownership of the 1,200 American patents taken out by the parent house. This New York company also owned other subsidiaries, including the Hudson River Aniline Works, through which it had established its Albany factory. "Berlin" was represented by the Berlin Aniline Works, also a New York corporation. Kalle & Company were operating through a third New York corporation, also called Kalle & Company. In these three cases all of the stock of the American house was admittedly owned outright by the parent organization. All three were accordingly taken over at the outset. The great Badische Co. acted through the Badische Co. of New York, the stock of which appeared on the books to be owned by Messrs. Adolph Kuttroff, Carl Pickhardt, and their chief employees. Leopold Casella & Co. were represented by the Casella Co., also a New York corporation, the stock of which appeared to be owned by its president, Mr. William J. Matheson, and its vice president, Mr. Shaw. Hoechst operated through a New York company known as Farbwerke Hoechst, of which the stock stood in the name of its president, Mr. Herman A. Metz. Of these gentlemen, Messrs. Kuttroff and Pickhardt were Germans by birth and Americans by naturalization. Messrs. Matheson and Shaw, Americans by birth and tradition, and Mr. Metz, American by birth. An extensive investigation was instituted by my bureau of investigation under the direction of Mr. Francis P. Garvan, and as the result of a long-continued and strenuous effort it was at last shown that the ostensible ownership of the stock of these three branches was not genuine but that each remained in fact owned by its German progenitor. As will hereinafter appear in the detailed accounts of these proceedings, each of these three companies has also been taken over."

GERMAN INDUSTRIAL CAMOUFLAGE

The report also points out that up to about 1910 all of the great German houses shipped their goods to their American representatives on a consignment basis, the representatives being paid wholly by commission. The prosecution, in 1912, of an officer of the Farbenfabriken of Elberfeld (later Bayer & Co., Inc.) for some of the corrupt practices in the way of bribing buyers, gave an insight into the German industry, and showed that it might be attacked under the Sherman law, as a conspiracy in restraint of trade. Suits were commenced against most of the American representatives.

"The institution of these suits, which were subsequently settled, resulted, in at least two cases, in a transfer by the Germans of their stock in the American company to the officers of that company. In the case of Badische Co., the stock of which was already in the names of the American representatives, it was only necessary to change the basis of the business from consignment to sale. This was done in all the cases, so that the German house might appear not to be doing business in this country through its representative, but to be merely selling to an apparently independent American corporation. There was on the surface no apparent reason why these transfers should not have been genuine. Each German house really controlled the situation with reference to its agent because it could instantly ruin its agent's business by withdrawing supplies. Accordingly, for a considerable period these houses escaped more than mere general suspicion, and it was not until the Bureau of Investigation of my department had acquired considerable familiarity with German methods of comouflage that the true situation could be disclosed."

Then follows a description of the various devices resorted to by many of these German concerns after the war started, to prevent the chemical industry of the United States from aiding the Allies, and the close relationship between these concerns and the imperial German propaganda, is touched on.

"At the time when I took office, it, of course, became the duty of all companies in which any alien enemies held stock to report such ownership. About half of those American chemical enterprises which are now known to be German owned complied more or less promptly with this requirement. The rest mostly relying on pretended transfers by which the stock had ostensibly been put in the hands of American citizens, paid no attention to the act until the activities of the Bureau of Investigation had disclosed the true facts. In some cases, however, the camouflage which concealed the true ownership was of a much subtler and more effective description. In the case of more than one of the companies which promptly reported themselves as entirely German owned, measures had been taken to transfer to companies which were presumably beyond the reach of the Trading-with-the-Enemy Act, the essential value of the German property and business."

BAYER & CO.

Particularly interesting to the medical profession is the custodian's report of the methods of Bayer & Co., Inc.:

"This company at an early date reported all its stock as held by one of the officers, Mr. Seebohm, for three trustees who in turn held for the benefit of the German parent house. It was, on the whole, the most important of all the German branches. Besides representing, as sales agent, one of the three equal giant concerns at the head of the German industry, it was the only German branch which had established any considerable manufacture in this country. Through the purchase of the stock of the Hudson River Aniline Works, it had acquired and greatly expanded a considerable plant near Albany, N. Y., in which it produced a few of the simpler coal-tar colors and considerable quantities of pharmaceuticals, especially the most valuable single product of the German house—the drug known throughout the world by its trade name of Aspirin. This was a patented coal-tar product on which enormous profits had been made. Practically the entire management of this company was in the hands of German subjects. The leading spirit, Dr. Hugo Schweitzer, was, as has been stated, among the most ardent propagandists and German agents in the country. The Albany plant represented the expenditure of many hundred thousand dollars, and the enterprise was exceedingly flourishing.

"To conceal the profits for the purpose of taxation another company was organized, known as Synthetic Patents Co. (Inc.), all the stock of which was also held by the German concern, to which were conveyed all the American patents of the German house, approximately 1,200 in number, and all the real estate, including the plant. By contracts between Bayer & Co. (Inc.), and Synthetic Patents Co. (Inc.), almost all of the profits of the former were diverted to the latter in the form of rentals and royalties. The investigation also covered a number of less legitimate evasions of the tax laws, and resulted in the recovery of a large sum by the Treasury."

In this connection it is interesting to read that the Bureau of Investigation "discovered that the treasury of Bayer & Co. (Inc.) was one of the great sources from which German propaganda funds in this country were derived." The details of the Alien Property Custodian's report on another one of the "Big Six" has especial interest to the medical profession; namely, that relative to the Farbwerke vorm. Meister Lucius & Bruning, in Hoechst-am-Main, referred to more briefly by the custodian as Hoechst.

THE FARBWERKE-HOECHST CONCERN

"The American branch of the great Hoechst Co. had for many years been conducted by Mr. Herman A. Metz. Prior to 1912, the New York corporation was known as H. A. Metz (Inc.), and a majority of its stock was always owned by the parent house. In that year the German company took over all but 10 shares of the minority stock which had previously stood in the name of Mr. Metz, leaving him the record owner of these 10, the only shares not held by them. At the same time the name of the New York corporation was changed to Farbwerke-Hoechst, so that the value of the good will might be firmly fixed in the German name. At about this time the antitrust proceedings above referred to were commenced against these companies also. Mr. Metz settled for $40,000 the suit commenced against his company, and proceeded to make strong representations to the German house to the effect that the stock ought to be owned by him so that it could be asserted that the German house was no longer doing business in America. A prolonged negotiation ensued, the Germans being very reluctant to make any change. At last in the summer of 1913 it was arranged that the 1,990 shares held by the German concern should be transferred on the books to Mr. Metz; that in return he should execute a demand promissory note without interest for the sum of $597,000; that the note should be delivered to the German company and the stock, together with a suitable transfer properly executed, should be deposited to the sole order of the German concern in a Montreal bank, as security for the note.

"At this time and for many years previous the American company had been operating under a contract by which the German house appointed it its sole American sales agent and agreed to furnish it with goods in return for which the profits were to be divided according to an arbitrary scale, irrespective of stock ownership. Under this arrangement the Germans were to have one half the profits of the color business and 75 per cent. of the profits of the pharmaceutical business, which, owing to the development of salvarsan and novocaine, had become of great importance. In return, and as a check on possible overcharges by the German house, Mr. Metz was to receive a percentage of their profits on the sales to the American company. An irrevocable power of attorney was given to Mr. Metz to vote the stock owned by the German company in the New York house and an option was reserved to the German company to purchase the stock in the event of Mr. Metz's death or retirement.

"This contract was continued unaltered after the stock transaction of 1913, and under it the profits were divided as long as it was possible to remit moneys to Germany. There was also an oral understanding between the parties that the note should not be payable except out of the stock or its proceeds, and that it could not be demanded as long as Mr. Metz should remain president of the company. It will thus be seen that the whole stock dealing produced no change whatever upon the rights of the parties. After it, as before, the share in the profits of each party remained the same, power to secure and pass title to the certificates remained as before in the hands of the German company alone; the voting power remained as before in Mr. Metz's hands; in fact none of the incident of ownership was in any way affected by the transaction.

"At the outset, Mr. Metz filed reports stating the existence of the note and the fact that certain stock was deposited as security for the same, but it was not until the ascertainment of the entire history of the transaction that the proof could be obtained that the transfer was not and was not intended to be of any effect. At last, however, the investigation thoroughly demonstrated this, and the stock has accordingly been taken over by me.

"During the course of the year 1916, Mr. Metz, finding that he could no longer secure from Germany supplies of pharmaceuticals, especially salvarsan and novocaine, which formed the most profitable part of his business, determined to enter upon their manufacture in this country. Correspondence with the German house proving unsatisfactory, he sent his brother, Dr. G. P. Metz, to Germany to secure the necessary permission. This permission was refused, but the latter came home with a sufficient knowledge to permit the commencement of the work. A new company was organized under the name of H. A. Metz Laboratories (Inc.), a New York corporation, and this company commenced the manufacture of these two invaluable medicinals, which has been continued since our entrance into the war under license from the Federal Trade Commission."

Almost as interesting are the details given in the report about the Badische Company of Ludwigshafen; of the Roessler & Hasslacher Chemical Company; and the Heyden Chemical Works, and the Bauer Chemical Company, the latter known as the manufacturers of the patent medicines "Sanatogen" and "Formamint." The stock of the Bauer Chemical Company, really the property of a Berlin concern, appeared, by a fictitious transaction, to have passed into the hands of a New York lawyer, who is now under indictment for his participation in other proceedings relative to another company. The stock of Merck & Company of New York appeared on the face to be owned exclusively by George Merck, but according to the custodian's report, investigation showed that the profits of this company had always gone to the German house in a manner utterly inconsistent with the apparent stock ownership. According to the report, George Merck insists that he is really the owner of one third of this stock, by virtue of the fact that he owns 20 per cent. interest in the Merck concern of Darmstadt. The Alien Property Custodian, however, held that indirect ownership of this kind could not be recognized, and has determined that the whole of the Merck stock is enemy owned.

The report closes with a description of the corporation that has been founded, to be known as the Chemical Foundation, Inc., in which practically every American manufacturer of importance will be a stockholder. The problem of this corporation is to acquire by purchase the German patents, which in the past have formed such a colossal obstacle to the American dyestuff industry. These will be held as a trustee for American industry and "for the Americanization of such institutions as may be affected thereby, for the exclusion or elimination of alien interests hostile or detrimental to the said industries, and for the advancement of chemical and allied science and industry in the United States." The Alien Property Custodian has sold to this company, by Executive Order, for the sum of $250,000, approximately 4,500 patents. It is believed that the organization of the Chemical Foundation will constitute the most important step in the protection of the new industry. A tariff has in the past proved utterly unavailing. In the future it would doubtless prove equally so, for, as the report says, Germany has so much to gain by extending its foreign trade and destroying the industry in other countries, that it would undoubtedly give away its goods in the United States for nothing in order to recover the American market.

THE JOURNAL realizes that this attempt to abstract this intensely interesting and valuable report is far from satisfactory, but it hopes that it may stimulate physicians to go to the trouble of getting a complete copy of the Report of the Alien Property Custodian.

Steps to Eradicate Defects in Youths.—The Maryland board of education has adopted measures with a view to eradicating physical defects in the youth of the state, following the submitting of figures at a recent meeting in McCoy Hall by Dr. M. Bates Stephens, superintendent of education, showing an alarming condition among young men. Dr. Stephens showed that in the first draft call for Maryland there were 21,644 young men ranging from 21 to 31 years, of whom 9,117 were rejected as physically unfit for military service. The percentage of unfit was entirely too high and could be greatly reduced by preventive measures. Greater stress on school sanitation, proper schoolhouse architecture, mandatory medical school inspection, instead of the present optional law, and larger provision for physical education in the schools, would be no small contribution toward better health conditions. Dr. William Burdick, Baltimore, supervisor of physical education, reported that the federal government has allotted $6,000 to Maryland to be expended in maintenance of a course of hygiene in the normal schools. He also reported that a beginning has been made to adjust the daily program so that physical exercise may be given regularly.

Correspondence

THE FOXHALL FOSSIL HUMAN JAWBONE

To the Editor:—In the year 1867, a Dr. Robert Hanham Collyer published an account of a fossil human jawbone which was found at a place called Foxhall, near Ipswich. In the days when this specimen was discovered, it was regarded as being in every way improbable that the human race was in existence in the Pliocene period to which the jaw was referred. But our knowledge has now greatly advanced, and we have now found flint implements at the same geological horizon at which the Foxhall jaw occurred. Prof. Arthur Keith, of the Royal College of Surgeons of England, and I are therefore anxious to know the whereabouts of Dr. Collyer's specimen so that it may be examined afresh in the light of our present knowledge. But, unfortunately, we cannot come on traces of it. It appears that Dr. Collyer was registered, June 23, 1868, with the General Medical Council in London, the qualification being M.D., Medical College, Pittsfield, Mass., 1839; and in 1898 his name lapsed from the Medical Register. We understand that the American Medical Directory states that the college from which, apparently, he obtained his degree is described as the Berkshire Medical College, Pittsfield, Mass., and that this institution is classed with those which are extinct or merged with other colleges. These details have been given me by the registrar of the General Medical Council in London, who has suggested that I should write to you in the hope that you may be able to give me some information in regard to medical practitioners who obtained this qualification at the time when Dr. Collyer obtained his. If you could let me know where and when Dr. Collyer died (it seems clear that after leaving England he returned to America) and if any of his relations are still living, I would be most grateful.

This is a matter of scientific importance and one in which, as the first discoverer here of the flint implements of Pliocene man, I am deeply interested, and this is my excuse for troubling you in this manner. I may say that I have put advertisements in the London *Times*, *Nature* and *Royal Microscopical Journal*, regarding the Foxhall jawbone, and the London *Illustrated News* is this week publishing an illustrated account of the discovery.

J. REID MOIR, One House, Ispwich, England.

[COMMENT.—See editorial with the same title, this week, page 1159.—ED.]

CONTRIBUTIONS FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—With this I beg to acknowledge the subjoined subscriptions in cash and also gifts of instruments. The cash was forwarded early last January, half to Dr. Antoine Depage for the Belgians, and half to the treasurer of the Comité d'Appui des Réfugiés de Professions Libérales for the French physicians.

The instruments donated in this list consisted of 180 entries, and the value is $368.85. Some of them were in sets, for example, a set of ear instruments, laryngeal instruments, postmortem instruments, and instruments for amputations. The number, therefore, is well above 200. These have been recently sent by Messrs. George P. Pilling & Son of Philadelphia, to whom my sincere thanks are due for the great care and trouble that they took in repairing, sharpening, packing, and finally forwarding the instruments to the agent of the Belgian Relief in New York. The value in money of their services they have declined to state, but it is, as in the case of the other instrument makers, whose equal generosity I have heretofore acknowledged, a very substantial contribution.

As this practically closes my very willing and delightful service in this matter I beg to say that all told I have received in cash $2,764.88. Of this, $100 was specifically for the Belgian physicians. The remaining sum was divided equally between the Belgian and French physicians. The total value of the instruments was $4,728.85, making a grand total of money and instruments of $7,493.73.

I have not yet received from Dr. Depage the number of the Belgian physicians who have been relieved, but I have from the French committee a complete list of names of physicians and hospitals that have been assisted, with the exception of the last $70. This list numbers seventy-seven, to which are to be added those that have been assisted by the last dispatch of money and of instruments, and is to be more than doubled by the number of Belgian physicians who have been assisted by us.

In the name of our suffering confrères of France and Belgium, I beg leave to thank the profession, and in addition a few friends outside of the profession who have generously aided us. Imagine yourself in the places of those poor desolated homes and you can then possibly realize, at least in part, the thankfulness they entertain for this help.

W. W. Keen, M.D., Philadelphia.

SUBSCRIPTIONS IN CASH

Dr. R. M. Ellyson, Washington, D. C.	$ 5.00
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MEDICAL MEN SHOULD BE SENT HOME PROMPTLY

To the Editor:—Medical units, after closing up the hospitals, are held up over in France for weeks and months, which is an outrage. Medical men certainly have made the greatest sacrifice, I think. Men with good incomes (from five to ten thousand dollars) have taken positions in the Army for eighteen or twenty-four hundred dollars to help a good cause along, and now they are treated shabbily. When the units are closed, they are sent to the seashore awaiting transportation, while thousands and hundreds of thousands of privates are sent over, but the professional man simply waits for transportation. Why should not doctors (in fact all professional men, who have a great deal to lose "by being kept idle") be sent over promptly? It is certainly the rankest mismanagement to keep men over there for six to eight weeks who have nothing to do, while if they were home, where they are generally needed, they could do good and valuable work. The War Department certainly should be stirred up. The medical men, I am sure, are willing to go on any kind of a ship, and travel third or fourth class, as long as they can get home.

J. H. Carstens, M.D., Detroit.

PROTEST INCREASE IN TAX UNDER NARCOTIC LAW

To the Editor:—I am writing to ask if our Association cannot make a concerted objection to the extra tax which the government has put on us, especially to its failing to credit the $0.50 paid under the old law on the amount demanded by the new law. For example, I paid $1 for the year ending June 31 next, $0.50 of which, of course, applied to the half year we are now in. At the revenue office I was told that the ruling was that no credit could be given for this, and consequently I paid the $1.50, the amount the new law requires for six months. I feel that this is an imposition, and as such, remonstrance should be made in such a way as to be felt.

Henry E. Hale, M.D., New York.

Mind and the New-Born.—The mind of the new-born infant is less in evidence than that of the new-born chick.—Lay.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NIKOLSKY'S SIGN—EPIDERMOLYSIS BULLOSA—PEMPHIGUS FOLIACEUS

To the Editor:—Please explain what is meant by Nikolsky's sign in dermatology. If I understand it, the phenomenon consists of a very loose connection between the epidermis and corium, allowing the epidermis to be very easily abraded. Please state the skin disorders with which it has been found to be connected, and indicate where and when it was first referred to. I have a case of an adult who for the past two years has had a condition similar to the symptoms of epidermolysis bullosa, excepting that no bullae develop at the site of injury. However, the epidermis is so readily abraded that he has a large number of denuded areas with weeping. Within a short time these become covered with a thin crust before healing. Should you be able to locate similar conditions in medical literature, I should be glad to have the references.

R. A. C. Wollenberg, M.D., Detroit.

Answer.—Nikolsky's sign has been described as "a condition in which the outer layer of the skin is easily rubbed off by slight injury." Sutton speaks of Nikolsky's sign in connection with his description of pemphigus foliaceus. Stelwagon, under the same head, refers to Nikolsky's "Contribution to the Study of Pemphigus Foliaceus of Cazenave" (Thèse doctorat [Kief], 1896) in which Nikolsky refers to seventeen cases of the disease reported by various authors whom he names. Stelwagon gives an extensive bibliography. According to Pusey, Cazenave first described pemphigus foliaceus in 1844.

Our inquirer does not give sufficient information on which to base a diagnosis. Failure to develop bullae at the site of traumas would seem to rule out epidermolysis bullosa; and the other characteristics of the case as far as given, with the easy abrasion of the epidermis as described by Nikolsky, might point to pemphigus foliaceus.

The following references will be found of interest:

Sutton, R. L.: Diseases of the Skin, Ed. 2, St. Louis, C. V. Mosby Company, 1917, p. 274.

Stelwagon: Diseases of the Skin, Ed. 6, Philadelphia, W. B. Saunders Company, 1910, p. 363. Extensive bibliography.

Pusey, W. A.: Principles and Practice of Dermatology, Ed. 2, New York, D. Appleton & Co., 1911.

Low, R. Cranston: *Brit. J. Dermat.*, 1909, pp. 101 and 135. Reports two cases of pemphigus foliaceus, both in women, and a third case complicated with dermatitis herpetiformis. He gives a full review of the literature.

Nikolski: Thesis on Pemphigus Foliaceus, Kief, 1896.

Biddle: *J. Cutan. Dis.* 1897, p. 203.

Klotz: *Am. J. M. Sc.* **102:** 20 (Dec.) 1891.

White, C. J.: *Boston M. & S. J.* **164:** 643 (May 4) 1911.

Hazen: *J. Cutan. Dis.* 1910, p. 118; ibid. 1912, p. 325.

Goldenberg, H., and Highman, W. J.: A Clinical Study of Pemphigus, *J. Cutan. Dis.* **36:** 577 (Dec.) 1918.

Wirz, A.: Exfoliating Dermatitis in Relation to Pemphigus, *Cor.-Bl. f. schweiz. Aerzte* **46:** 1685 (Dec. 9) 1916.

Ravogli, A.: Epidermolysis Bullosa, J. A. M. A. **69:** 256 (July 28) 1917.

Weiss, R. S.: Epidermolysis Bullosa: A Case showing Loss of Elastic Tissue in Apparently Normal Skin, *J. Cutan. Dis.* **35:** 26 (Jan.) 1917.

PETROLEUM POISONING

To the Editor:—I have a patient, a man, who drives an oil wagon and handles several hundred gallons of gasoline, distillate and kerosene daily. He has recently developed peculiar symptoms consisting of vertigo, throbbing of the temples, lassitude and loss of appetite. After examining him thoroughly I can find nothing which would cause these symptoms. Can you give me any information on the possibility of poisoning through inhalation of gasoline fumes?

Ivan W. Keith, M.D., Beaumont, Calif.

Answer.—This question was discussed in Queries and Minor Notes, Nov. 15, 1913, and July 28, 1917. In brief, the general symptoms of petroleum poisoning are headache, dizziness, accelerated heart action, labored respiration, collapse, stupor, unconsciousness and, more rarely, convulsions. Sometimes there is a rise of temperature. In case of actual collapse it is necessary to use the usual restorative measures in the form of warm baths, cold effusions and the usual respiratory and cardiac stimulants. It would seem desirable that in the case of a man particularly susceptible to symptoms on inhalation of the fumes of petroleum products, he find an occupation which would not subject him to this hazard.

The subject has been more fully discussed in an article by J. G. Johnson on the "Toxic Effects of Gasoline Fumes," *Canadian Medical Association Journal*, February, 1913.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

Georgia: Atlanta and Augusta, June 5-6. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 12. Sec., Dr. J. R. Judd, Beretania St., Honolulu.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

Nevada: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

North Dakota January Examination

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 7-10, 1919. The examination covered 13 subjects and included 106 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Two candidates were licensed through reciprocity, and 1 candidate, a graduate of the University of Pennsylvania in 1873, received a special license on account of forty-five years of successful practice. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Detroit College of Medicine and Surgery	(1916)	81
Barnes Medical College	(1911)	79
FAILED		
College of Physicians and Surgeons, Baltimore	(1882)	54.5

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Chicago Homeopathic Medical College	(1889)	Minnesota
University of Minnesota	(1912)	Minnesota

Ohio December Examination

Dr. H. M. Platter, secretary of the Ohio State Medical Board, reports the oral, practical and written examination held at Columbus, Dec. 3-5, 1918 The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass Of the 20 candidates examined, 15 passed and 5 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1918)	90.3
Rush Medical College	(1918)*	84.2
Johns Hopkins University	(1918)	87.5
Harvard University	(1918)	89.9
Columbia College in the City of N. Y.	(1894)	77.1
Cleveland College of Physicians and Surgeons	(1910)	84.5
Ohio State University College of Medicine	(1918)	85.1
Western Reserve University	(1918)	83.1
Jefferson Medical College	(1918)	77.4, 82.2
University of Pennsylvania	(1918)	88.5
University of Pittsburgh (1917) 89.6; (1918) 83, 85.5, 87.8.		
FAILED		
Atlanta Medical College	(1890)	46.8
Homeopathic Hospital College	(1892)	†
Meharry Medical College	(1918)	†, †, 69.7

*Received certificate for four years' work. Degree will be granted on completion of hospital internship.

†No grade given.

Irregulars and Their Methods.—Irregular practitioners do not prosper because their therapeutic methods are successful, but because of the advantage they take of sick people. Why not put an end to the taking of this advantage? It is now unethical to guarantee a cure; why not make it unlawful as well by the enactment of special legislation? The taking of money in advance of treatment should constitute *prima facie* evidence of fraudulent intent. If it were accepted after unsuccessful treatment, the failure to cure should then constitute proof of fraud, assuming the previous guarantee. Restitution of the fee should be included in the penalty.—*Weekly Bulletin*, Department of Health, New York City.

Book Notices

Quarterly Medical Clinics. A Series of Consecutive Clinical Demonstrations and Lectures. By Frank Smithies, M.D., F.A.C.P., Associate Professor of Medicine, School of Medicine, University of Illinois. Volume 1, Number 1. Paper. Price, $1.50. Pp. 188, with 42 illustrations. St. Louis: Medicine and Surgery Publishing Company, Inc., 1918.

The success of the Murphy Clinics popularized this form of medical literature. This venture was followed by the Medical Clinics of Chicago, subsequently the Medical Clinics of North America, the Surgical Clinics of Chicago, and others. A recent recruit is Smithies' Quarterly Medical Clinics. The preface modestly points out that students and visiting physicians had suggested to Dr. Smithies that his clinics be presented in permanent form. The distinctive feature of these clinics, differing from those mentioned, is the addition to each case report of detailed notes on clinical and laboratory procedures describing the elementary laboratory and clinical methods used by the author or his laboratory assistants in reaching a diagnosis. The descriptive titles on the cases seem unnecessarily verbose; for example,

"Mr. C. D., an Adult Blacksmith, with a Previous History of Enterocolonic Amebiasis, Walked into the Hospital Complaining of Severe Frontal Headache, Mental Cloudiness, and Feeling as Though he had Fever." This is the title. The case, it develops, was one of diffuse, acute cerebrospinal meningitis, the treatment of which consisted of good nursing, "preliminary purge with 2 ounces oleum ricini; urotropin, 10 gr., every two hours in an attempt to combat cerebrospinal infection." Incidentally, cultures from the spinal fluid on two examinations had been negative. The routine form for each case is the presentation of history, environment, preliminary physical examination, special examinations, positive findings, differential diagnosis, usually a general discussion of the subject, including the pathology of the disease, and finally treatment. In general, the therapeutic methods used are rational and simple. In places the language of the author is somewhat unusual; for example, "The 'hard boiled egg' type of drunkard rarely reacts to the psychology of 'drink-cure' institutions; he comes to look upon 'taking the cure' as part of the price he must pay for the joys of his jag"; and elsewhere, "In effecting a cure himself he has about as great a chance as he would to buck a First Ward 'crap' game." This presumably adds local color.

The Unsound Mind and the Law: A Presentation of Forensic Psychiatry. By George W. Jacoby, M.D., Consulting Neurologist to the Hospital for Nervous Diseases. Cloth. Price, $3 net. Pp. 424. New York: Funk & Wagnalls Company, 1918.

The author in his introduction states the irreconcilable differences that have arisen in the application of legal dicta of responsibility in mental disease. He makes no effort to reconcile them. To attempt to do so at this time would be not only useless but also untimely. He contents himself with urging the physician, on the one hand, to obtain some juristic knowledge and, on the other, those who are charged with the administration of the criminal law to equip themselves in psychiatry to such an extent that they may be able to understand the principles underlying opinions given by physicians.

The discussion of the general relations of jurisprudence and psychiatry opens with a historical retrospect showing the genesis of the varying views in relation to responsibility in mental disease as they have been formulated from the earliest times. The author points out that psychiatry has had to travel a difficult road, and that long after inductive methods of observation had taken root in general medicine, psychiatry was still looked on as an intellectual science. He leaves us in no doubt as to his position when he says that the term "mental" disease is misleading, conveying as it does a notion of disease of the mind as opposed to a disease of the body. It would be profitable if the writer's words were hung as a motto in every hospital where sick people are treated: "Mental disease is bodily disease, and differs from other forms of such affliction merely by reason of the fact that it has its seat in the brain. Not every brain disease is mental disease. But every mental disease is brain dis-case even when no anatomical lesion of the brain is discoverable." The earliest writers, notably Hippocrates, had this conception of mental disorder, but it was buried under the mass of superstition which developed in the middle ages.

One of the most satisfactory chapters is that devoted to the examination of the insane. The second half of the book deals with psychiatric expertism and consists of a discussion of various forms of mental disease together with a description of their symptoms and differential diagnosis and a discussion of their forensic aspects. This part will be found to be of special value for the legal profession, as it succinctly and accurately tells what is meant by a diagnosis in mental disease and how it is arrived at, and the general principles on which responsibility should be assessed in each group of disorders.

Jacoby leans strongly toward the idea of modified responsibility in mental disease. It is difficult to understand how a psychiatrist could reach any other conclusion, but unfortunately the application of such doctrine at this time is purely academic. There is in the majority of jurisdictions in this country no provision for carrying it out. The statute prescribes certain penalties for certain cases, and if the defense of insanity is successfully made there is no place for the patient to go excepting to an asylum. If, on the contrary, it is not maintained, the penitentiary and the gallows are the only alternatives. In those states which still maintain capital punishment, a sort of modified responsibility is obtained by the substitution of life imprisonment in capital cases when there is a doubt of mental capacity. Whether the substitution of life imprisonment for the death sentence is in effect a modification of responsibility is perhaps open to argument.

The author has produced an excellent book—one that was needed at this time, and one that will do much toward putting modern psychiatry in the possession of those who have charge of the administration of the criminal law but who are not possessed of any technical knowledge of the subject.

Genitourinary Diseases and Syphilis. By Henry H. Morton, M.D., F.A.C.S., Clinical Professor of Genitourinary Diseases in the Long Island College Hospital. Fourth edition. Cloth. Price, $7. Pp. 807, with 330 illustrations. St. Louis: C. V. Mosby Co., 1918.

If one favors the idea of embodying urology and syphilology in one treatise, then Morton's book must be regarded as a most satisfactory one. All the chapters are written with equal care, and the presentation of the matters discussed is concise and yet perspicuous. A feature worthy of mention is the endeavor of the author to give proper credit to other medical writers for their contributions to the advance of the specialty. In forty chapters devoted to urology, the author covers practically everything that is worth knowing in this line of work. The modern methods of examination and diagnosis are fully described, and are illuminated by numerous illustrations, among which the colored plates are deserving of praise. The generally accepted tests of elimination are described, and valuable hints are given concerning their application and the interpretation of the results. The discussion of gonorrhea is complete; it will be a welcome guide for the practitioner. The sober attitude taken by the author toward operations for malignant growths of the bladder will be appreciated by every surgeon who does not permit his ambitions to run riot with his judgment. Radiotherapy of the bladder and the clinical features of vesical diverticula would seem to deserve more than the somewhat scanty discussion given these topics. Twelve chapters are devoted to the clinical aspects of chancroid and syphilis. Special stress is laid on the diagnosis, and the outline given in the form of tables is particularly instructive. The most important types of clinical manifestations are presented by the aid of many illustrations, among which the colored plates again deserve special recognition. The modern laboratory tests are not only described in reference to their technic, but are also explained from a biologic and biochemical standpoint. The therapy is presented clearly. Of great value is the discussion of the various methods with reference to the state of the disease and the general condition of the patient. The dangers and untoward effects of the modern energetic treatment are pointed out with great precision, and valuable hints as to their prevention are furnished.

Social Medicine, Medical Economics and Miscellany

Health of Workers and the Eight Hour Day in Wool Manufacturing

The National Industrial Conference Board Research Report No. 12, just issued, discusses the hours of work as related to the output and to the health of workers in wool manufacturing. Statistically the report is based on replies from 111 establishments employing 71,595 workers, supplemented by reports of field agents. All together, the report covered 126 establishments employing 47 per cent. of the total number of wool mill workers in the United States. With the question of output we are not particularly interested, although it is worth noting in passing that the board concludes that the adoption of a fifty-four hour schedule in the wool manufacturing industry has in a large number of cases resulted in a reduced output. Regarding the effect on the health of the workers, the investigators found that on account of lack of satisfactory records and careful observation of health conditions, conclusive judgment was impossible and only approximate deductions could be made. Of the fifty-seven establishments reporting definitely on health conditions, fifty stated that the shortening of the hours of work had no significant effect; three reported good effects, and four reported decided improvement. Each of the seven reporting good results had had a previous schedule of fifty-eight hours; those in which the weekly reduction amounted to only two hours reported no apparent change in health conditions. There appears to be no strictly occupational disease in the wool manufacturing industry. Suction shuttles are not allowed in wool factories as they are in cotton mills. Animal dusts are considered less harmful than the vegetable dusts evolved in cotton and flax manufacture. The dirt given off in wool sorting, rag sorting and grinding is irritating to the respiratory tract, and in extreme cases causes "shoddy fever" with symptoms similar to influenza. The greater part of this dust has been eliminated in the more modern mills. The carbonizing process is more or less hazardous on account of the dust and fumes. Anthrax, in its pulmonary form known as "wool sorter's disease," is apparently extremely rare in the wool industry in this country. Of 132 deaths from anthrax recorded in the twenty-four registration states from 1910 to 1915, only one of the victims had been engaged in woolen manufacturing. The president of a large woolen mill states that in fifty years' experience he has never had a case in his mill and has known of but one case. Most of the anthrax in this country is found among those working in hides and dry hair rather than wool. In striking contrast to the condition in this country, the Seventeenth Abstract of Labor Conditions of Great Britain reports that of 150 cases of anthrax in Great Britain, from 1900 to 1913, sixty-six were in the wool manufacturing industry. The comparative freedom of American wool sorters from this disease is largely due to the relatively small amount of wool imported from regions where anthrax is prevalent. The heat, humidity and poor ventilation found in the weaving sheds results in coughs, colds, rheumatism and pulmonary diseases, while the chemicals used in scouring and dyeing are also responsible for some industrial disease. As is to be expected, tuberculosis among wool workers has a higher rate than the average, the percentage of the total number of deaths for the three decades from 25 to 55 being 41.7, 35.3 and 16.7 for wool mill operatives as against 30.8, 25 and 15.6 for all manufacturing and mechanical groups. In pneumonia also the rate among wool mill operatives is markedly higher, being 12.5 and 13.2 for the decades from 25 to 45, as contrasted with 7 and 9.5 for the same decades in all manufacturing and mechanical pursuits. Strangely enough, however, in the decade from 45 to 55 the percentage of deaths from pneumonia to all deaths in the wool mill operatives class is only 6.1, while in all manufacturing and mechanical pursuits it is 9. On the other hand, the percentage of deaths from heart disease and nephritis is less among wool workers from 25 to 45, but higher from

45 to 55 than it is among all manufacturing and mechanical pursuits. Regarding accidents, while there are few conspicuously dangerous machines, there is a relatively large number of accidents among workers in the wool industry, the insurance rate being 83 cents per $100 for wool spinners as against 92 cents for cotton spinners and weavers and 30 cents for silk manufacturing. This, in the opinion of the board, is due to complex and crowded arrangement of the machinery, to unguarded machinery, to slippery floors and to carelessness on the part of workers themselves. The final conclusions are that the adoption of a fifty-four hour schedule has had an unimportant effect on the health of workers; that the occupation is comparatively free from strictly occupational diseases; that it has a distinctly high death rate from tuberculosis and pneumonia caused in part by the high temperature and humidity characteristic of certain processes in the industry, and that the high death rate from tuberculosis among wool mill workers would indicate that conditions within the industry are a contributing factor.

Ireland and a Ministry of Health

T. Hennessy, F.R.C.S.I., D.P.H., Irish secretary of the British Medical Association, discussing the subject of Ireland and a ministry of health in the *Dublin Medical Journal,* Feb. 1, 1919, says that in an experience of almost twenty years in the County Tipperary Dispensary as a physician in the Poor Law Medical Service he found that between 50 and 70 per cent. of the Irish population receive free medical treatment as "poor persons." This abuse of dispensary privileges, he says, is not so much the fault of the Irish people as of legislators, who are too indifferent to make themselves acquainted with the medical needs of the country, or to take the advice of those who can best give it. He believes that Ireland is more in need of legislation providing for a ministry of health than any other country of western Europe. The main principles governing the establishment of such a ministry should be as follows: It should take over the complete control of all the health services belonging at present to the different government departments; its administrative functions should be carried out by a central body called the board of health, presided over by a minister of cabinet rank; to this board should be transferred, in Ireland, (*a*) the duties of the Local Government Board with regard to health; (*b*) the duties of the Home Office with regard to the inspection of workshops and factories, and those of the board of trade, for example, medical inspection of ships; (*c*) the Irish Insurance Commission; (*d*) administration of lunacy laws; (*e*) health functions of the Privy Council with regard to midwives, etc.; (*f*) Education Extension Act, 1915, and medical inspection of schoolchildren; on the board of health there should be members of the medical profession representing, in equal numbers, the clinical and preventive sides of medicine, and there should be a consultative council for giving advice and assistance in all health matters.

For local organization, the country should be divided into suitable administrative areas which would require the services of whole-time administrative medical officers, both clinical and preventive. In each county and borough there should be county and borough health committees, composed of dentists, pharmacists and certain lay persons. There should also be district health committees, the functions of which, as well as the duties of the medical officers and the dispensary physician assistants, are outlined by Hennessy. For each area the county health committee should established hospitals, including, when necessary, sanatoriums, clinics (including natal and prenatal maternity, and child welfare), nursing schemes, and medical and dental inspection of schoolchildren. There should also be provided pathologic laboratories and facilities for consultation and specialist services.

Though the reports of the Local Government Board for the three years preceding 1918 show that an average of 610,322 new cases were attended and registered as poor persons by the dispensary physicians, about one third of whom were attended at the patients' homes, Hennessy says that this does not represent half of those attended, on account of records not having been made of the cases. The amount of work thrown on the dispensary physicians is very large, and for it they are very poorly paid. The average population for whose "public health" the dispensary physician is responsible is between 4,000 and 5,000, and his salary is about £15 ($75) a year. For the actual work and liabilities for the treatment of about two and a half million people in Ireland in 1917, the dispensary physicians received £109,604, or an average of approximately £130 a year.

Remarkable Case of Personation of a Dead Physician

A curious case of personation of a dead physician for many years came to light recently in a British court. In the fashionable town of Chislehurst, Kent, a man practiced under the name of James Allan and enjoyed an excellent position. He was surgeon to a number of charitable institutions and to the local cottage hospital. He moved in the best medical circles, for he was also a fellow of the Royal Society of Medicine, a member of the West London Medical Society, and the author of several medical papers, some of which had appeared in the transactions of the West London Medico-Chirurgical Society. Among these were "Twelve Cases of Tracheotomy in Young Children with Nine Recoveries," 1899, and "Treatment of Malignant Disease by Electric Currents of High Potential and Frequency," 1902. In the Medical Directory (which it must be remembered is not an official book but is issued by a firm of publishers), his name appeared from 1901 onward as James Allan, M.B., C.M., of Edinburgh, the exact name and qualifications of a physician who practiced in Bradford and died in 1898. The deception was discovered in this way: The defendant was largely instrumental in forming a branch of the V. A. D. (Voluntary Aid Detachment, an institution formed for training women in duties of nursing so as to be able to help in case of emergency). When the war broke out, the V. A. D. was able to provide an almost unlimited amount of nursing and other help for the hospitals that were formed all over the country. The defendant was appointed medical officer of the V. A. D. hospital at Chislehurst, and also assistant county director for the V. A. D. in Kent. For this work he was decorated by the government, received the distinction of O.B.E. (Order of the British Empire). But this was his undoing. When the usual annual form was sent out by the Medical Directory to all physicians on its list, he returned his name with the distinction O.B.E. added to it, and this also appeared in the newspapers and was seen by the registrar of the General Medical Council whose duty it is to supervise the Medical Register (the official list of all physicians). On looking at this he found that there was no such practitioner registered. The history of the defendant was as follows: He was the son of a farmer at Lurgan, Ireland. At 18 he went to Glasgow, where he was a shop assistant and studied medicine. He remained in Glasgow until about 1893 and then became an assistant to physicians in London until about 1901. Then he went to Chislehurst, where he has practiced ever since. About the time he began to practice at Chislehurst the sister of the late Dr. James Allan received a request from a person in Glasgow asking if she would dispose of her brother's diplomas and saying that he had a hobby for collecting diplomas. The sister did not part with the diplomas. The writer of the letter turned out to be a physician practicing in Glasgow who knew the defendant well. When the case came into court, Lord Chilston, director of the Kent V. A. D., was called to give evidence of the character of the defendant. He spoke highly of the work of the defendant in connection with the Red Cross Hospital at Chislehurst, of which the defendant had had charge. Of the 2,161 patients who had passed through it, only one had died, and that was a patient with pneumonia. Canon Dawson, rector of Chislehurst, said that the defendant had attended his household for sixteen years successfully and skilfully. The defendant was ordered to pay the maximum penalty of $100, and $50 costs. Many cases of imposture in connection with the medical profession have occurred, but it is doubtful if ever an impostor enjoyed such a respectable position in the eyes not only of the public but also of the profession.

Medicolegal

Using and Submitting Reports of Assistants

(Mesmer & Rice et al. v. Industrial Accident Commission et al. (Calif.), 173 Pac. R. 1099)

The Supreme Court of California, in affirming an award of the Industrial Accident Commission in favor of one Wilson for injuries alleged to have been suffered by him in the course of his employment by Mesmer & Rice, says that the employers contended that the disability for which compensation was sought was due to a certain disease with which it was said Wilson was afflicted, rather than to the injury received by him. After the taking of the evidence before the referee, it was agreed, or understod, that Wilson was to submit himself to an examination by the physician of the commission, who was to take whatever measures he might deem necessary to reach a conclusion, and that his report was to be made to the referee, to be used by the commission in arriving at a conclusion. The report of the physician was presented, accompanied by the reports of two other physicians whom he had in consultation with him in the case, one of which latter reports was a report of certain symptoms as shown by an examination, and the other was simply a report of the result of a Wassermann test, the answer being "negative." The employers complained of the physician of the commission submitting to it with his own report, and as a part thereof, the reports to him, which were thus made evidence in the proceeding. But it could not fairly be disputed that, in view of the understanding that the physician of the commission was to take whatever measures he deemed necessary to reach a conclusion, he had the right to employ assistance to make certain observations as to Wilson, including a serologic examination, and to report the result for his information in observing Wilson, and in coming to a conclusion. This he did, and on their reports to him and his own personal observation of the case, continued for many days, he made his own report to the commission. There can be no doubt that his report was, in view of the understanding of the parties, competent evidence to be considered by the commission. The court may assume for the purposes of this decision that the written reports of the two assistants, which the physician submitted with his report, were not competent independent evidence, for the consideration of the commission, and that the application of the employers before the award was made, that such other reports should be stricken out and withdrawn from the record, should have been granted. But the failure of the commission to reject the incompetent evidence could not affect its jurisdiction to make the award, and independent of the evidence alleged to be incompetent there was ample evidence to support all the findings. At most, there was refusal on the part of the commission to strike out incompetent evidence which was merely cumulative of other evidence, and in no way essential to support the conclusion of the commission. It may further be noted that, in view of the report of the physician of the commission, the other reports were of no substantial importance. Wherefore the award is affirmed.

When Fees Paid in Advance May Be Recovered

(Bucklin v. Morton (N. Y.), 172 N. Y. Supp. 344)

The Supreme Court of New York, appellate term, first department, reverses a judgment that dismissed the complaint in this action to recover money paid in advance by the plaintiff to the defendant for medical services to be rendered by the defendant as a physician at his office and which the plaintiff could not receive on account of his having become very ill and being unable to leave his house to go to the defendant's office. The court says that the rule governing cases of this character has been well stated as follows:

"The principle underlying these cases is that the contract was entered into by the contracting parties on the implied condition of the continued ability of the party who is to render the services to perform, and that, when unable to perform, because of sickness or physical or mental incapacity proceeding from no wilful or deliberate conduct of the party, such inability is in consequence of an act of God, and excuses performance. . . . The obligation of the party who is to receive the services to pay is conditional on the obligation of the party who is to render the services to perform, and vice versa. If the contract of employment is to continue operative and binding, those interdependent obligations must continue to exist; and, if one party is excused from the performance of his obligations, the obligations of the other party must likewise come to an end."

The rule would seem to be equally applicable to both parties to a contract, in which the services to be rendered and received were dependent on the physical ability of the plaintiff to attend for treatment and of the defendant to give the treatment. In the event of illness of the defendant and his physical inability to perform, he would not have been liable for damages for breach of contract, but would have been obligated to return to the plaintiff the money paid in consideration of services subsequently to be rendered and not actually rendered. If, by reason of the defendant's inability to perform through no fault of his, the contract ceased to be binding on the defendant, it became inoperative in like manner to the same extent in the event of similar disability on the part of the plaintiff.

There was no evidence to support the contention of the defendant that the money paid by the plaintiff was paid as a retainer. It was paid in contemplation of services to be rendered, the rendition of which, by reason of the continuing serious illness of the plaintiff, became impossible. On the expiration of the period during which the monthly treatment was to have been rendered, the plaintiff became entitled to the return of the money; there being no proof of any expense having been incurred by the defendant in preparation therefor prior to the plaintiff's permanent disability. The judgment rendered in favor of the defendant must be reversed, and judgment directed in favor of the plaintiff for the full amount, with interest and costs in this court and in the court below.

What Medical and Surgical Aid or Service Includes

(Olmstead v. Lamphier et al. (Conn.), 104 Atl. R. 488)

The Supreme Court of Errors of Connecticut, in holding that the workmen's compensation act of that state imposed a legal duty on the defendant to purchase for the plaintiff an artificial leg as a part of the surgical aid or service provided for in said act, says the court was left with the bald question whether surgical aid or service includes the furnishing of an artificial leg. There is no specific provision for the furnishing of medicines or any material or apparatus required by the physician. Yet it is clear that all these are included in the term "medical aid or service." It must also be clear that all necessary bandages, materials, splints, and apparatus required by the surgeon in effecting a cure are included under the term "surgical aid or service." The fact is that Section 7, as amended by Chapter 368 of the Public Acts of 1917, is general in its terms and purposely so. In the New York act there is a specification of various things to be furnished. In Connecticut a different course was adopted, general terms being used in the act with the intention, the court thinks, to include all things which might reasonably fall within its provisions. The employer is required to furnish the employee a physician, and, in addition, "such medical and surgical aid or hospital service as such physician shall deem reasonable or necessary." This language is broad and general.

"Medical aid" is relief pertaining to the science of medicine. And "surgical aid" is relief pertaining to surgery or used in surgery. The term in its ordinary significance is not limited to the personal service of the surgeon, but includes all the means and instrumentalities used in surgery which will help effect a cure. Splints and crutches and apparatus for holding the limb manifestly are brought to the patient by the surgeon, adjusted by him, and usually paid for directly by the patient. It is part of the duty of the surgeon to prepare the stump of arm or leg for the artificial arm or leg. It is a part of his duty to adjust it. Why give the patient splints to hold the bones in place or crutches with which to walk, and regard these as used in surgery? Why supply a glass eye? Because it is the everyday duty of the surgeon to order these things for his patient, and they are included as of course under "surgical aid." There is no difference between supplying these and the artificial limb. That pertains to surgery and is used in surgery. The stump must be prepared by the surgeon to receive the artificial limb, and that must be adjusted to the stump by the surgeon. The only difference between the crutch and the artificial limb is the latter costs more than the former.

The Connecticut act contemplates the furnishing of all the medical and surgical aid that is reasonable and necessary. The purpose of this provision is to restore the injured employee to a place in the industrial life as soon as possible by the use of all medical and surgical aid and hospital service which ordinary usages of the modern science of medicine and surgery furnish. Humanity and economic necessity in this instance are in harmony in working for the accomplishment of the individual and of the public welfare.

"Surgical aid" is a term of technical significance and has an established meaning in standard works on surgery. The duty of the surgeon does not end with the healing of the stump. His duty continues until the artificial limb is adjusted and the patient has learned how, with the help of the surgeon, to use it properly. It would not be questioned that the entire bill of the surgeon for his services would fall under the head "Surgical Aid." It would be difficult to justify this expenditure, as well as that for bandages or ointments or other material used by the surgeon in his treatment of the patient, and not make a like expenditure for the artificial leg in connection with which these things were used.

Basis for Opinion

(Ft. Smith & Western Ry. Co. v. Hutchinson (Okla.), 175 Pac. R. 922)

The Supreme Court of Oklahoma holds, in this personal injury case, that a physician in giving evidence as an expert may base his opinion on his observation and examination of the patient, together with a history of the case as given to him, and such opinion will not be rendered inadmissible in evidence because based partly on statements made to him by the patient with reference to her condition, symptoms, sensations, and feelings when they were made to, and received by him, and were necessary to an examination and proper diagnosis and treatment of the patient's injuries.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anesthetists, Atlantic City, June 9-10.
American Physiological Society, Baltimore, April 24-26.
American Proctologic Society, Atlantic City, June 7-9.
American Therapeutic Society, Atlantic City, June 6-7.
Arizona Medical Association, Globe, June 2-3.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, June 5.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Massachusetts Medical Society, Boston, June 3-4.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
Rhode Island Medical Society, Providence, June 5.
Texas State Medical Association, Waco, May 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March 15, 1919, **25**, No. 2

Developmental Relations of Brachydactyly in Domestic Fowl. C. H. Danforth, Seattle, Wash.—p. 97.
Ovary of Spermophile (Sphermophilus Citellus Tridecemlineatus) with Special Reference to Corpus Luteum. D. Drips, Rochester, Minn. —p. 117.
Correlation of Pelvic Structure and Habits of Certain Burrowing Mammals. R. N. Chapman, Ithaca, N. Y.—p. 185.

American Journal of Diseases of Children, Chicago

April, 1919, **17**, No. 4

*Scurvy: Factors Affecting Antiscorbutic Value of Foods. A. F. Hess and L. J. Unger, New York City.—p. 221.
*Fat Metabolism of Infants and Young Children: I. Fat in Stools of Breast Fed Infants. L. E. Holt, A. M. Courtney and H. J. Fales, New York City.—p. 241.
Nutrition Clinic in Public School. W. R. P. Emerson, Boston.—p. 251.
*Bovine Tuberculosis in Children. R. S. Austin, Chicago.—p. 264.
Nephritis of Children. L. W. Hill, Boston.—p. 270.

Antiscorbutic Values of Foods.—During the late war there was considerable scurvy among the troops of the various armies; least of all along the western front. The scurvy was mainly of the latent or subacute variety, and influenced the character of some of the infectious diseases. Scurvy also prevailed among the civilian population to a degree far greater then in peace times. In infants the question of scurvy centers about the milk supply. An infant requires fully 1 pint of fresh raw milk daily to protect it from this disorder. If the milk is pasteurized, or stale, or heated for a second time, or rendered more sensitive to deterioration by means of an alkali—and particularly if more than one of these influences are operative—more than a pint is needed. The fact that there is an inverse relationship between the amount of milk consumed and the tendency to scurvy in the authors' opinion show that the poison is not an exogenous toxin and argues in favor of the disorder being primarily a deficiency disease.

Hess and Unger point out that milk does not necessarily lose its antiscorbutic value in the course of drying. If it is dried rapidly, even at a temperature of about 240 F., it retains sufficient of the protective factor to have curative value, provided, naturally, that it was fresh at the time of drying. In considering the question of destruction of this "vitamin" by heat or by alkali, the duration of exposure to the deterimental influence is of the greatest importance. Babies fed on pasteurized milk should receive an antiscorbutic from the time they are a few weeks of age, as there is no reason for allowing the negative balance of "vitamin" to continue for a longer period. A small amount of orange juice will answer the purpose, and is potent for a period after alkalinization. Its value does not reside in its laxative properties, or in its salt content, as "artificial orange juice" has practically no therapeutic effect. If orange juice is filtered, boiled, and rendered faintly alkaline it may be given intravenously without causing any slightly untoward reaction. In this way a very prompt cure can be effected.

From a pathogenic point of view, a result obtained by this route is of interest as demonstrating that scurvy can be counteracted by a therapy acting quite apart from the alimentary tract. Diuresis and catharsis do not play an important rôle in the cure of scurvy, as they may be stimulated to a high degree without alleviating the symptoms. This fact argues against regarding this disorder as essentially toxic in nature. It was found also that giving an antiseptic (sodium benzoate) was without effect. Dehydrated vegetables were ineffective in two instances studied by Hess and Unger in which an equivalent amount of fresh vegetables brought about a cure. They do not infer from this result that dehydration necessarily destroys this "vitamin." In this connection too much attention has been paid to the degree of the heating process, and too little to the more important factors —the age of the vegetables, their freshness previous to dehydration, their manner of preservation, etc. For almost a year strained canned tomatoes have been given by Hess and Unger, in place of orange juice, to a large number of infants. This substitute has been found a very effective antiscorbutic, and is well borne by babies a few weeks of age. It has the advantage of low cost and availability, and therefore is of particular value for the infants of the poor.

Fat Metabolism of Infants.—The fat of the stools of normal breast fed infants, according to the observations made by Holt and others, averaged 34.5 per cent. of the dried weight and frequently was as high as 50 per cent. The soap fat in the best stools predominated over the other forms of fat, averaging 57.8 per cent. of the total fat, as determined on the dried stool. The average stool of the normal breast fed infants showed a soap fat of 43.1 per cent. of the total fat, as determined on the dried stool, which would correspond to over one third of the total fat of the fresh stool. The neutral fat in the best stools averaged 15.9 per cent. of the total fat; in the average stool the neutral fat was 20.2 per cent. of the total fat. The amount of neutral fat is not affected by the drying process. No constant relation was shown between the percentage of fat in the mother's milk and the percentage of total fat and its distribution in the stool. With a higher total intake of fat, the fat percentage and the soap fat in the stool were somewhat increased. A range of fat absorption from 90.3 to 99.2 per cent. of the intake was found in healthy breast fed infants.

Bovine Tuberculosis in Children.—An analysis of twenty-four cases of tuberculosis in children and infants is made by Austin with special reference to the bovine or human type of infecting organism in each case. Seven of the twenty-four patients were infected with the bovine type of the tubercle bacillus. In the twelve cases in which the primary focus was noted, it was found in the right lung in six, in the left lung in two, in three cases apparently in a bronchial lymph nodule on the right side, and in one case in the intestine. One of the bronchial node cases and the intestine case had bovine infections. The corneal scratch test was not very satisfactory. Although consistently negative in rabbits with human type infection, it was not always positive in the bovine type animals.

Austin sounds a note of warning in regard to infection through cow's milk, it being generally considered that bovine infection is most likely to occur in this way. Notwithstanding that all milk sold in Chicago is supposed to be pasteurized, yet here are seven cases of bovine infection out of twenty-four cases of tuberculosis in children. This fact, he thinks, points to the necessity of home pasteurization of cow's milk.

American Journal of Medical Sciences, Philadelphia

April, 1919, **157**, No. 4

*Roentgen-Ray Intoxication: Disturbances in Metabolism Produced by Deep Massive Doses of Hard Roentgen Rays. C. C. Hall and G. H. Whipple, San Francisco.—p. 453.
Importance of Motion Field in Comparison with Form Field in Failing Vision. W. G. Spiller, Philadelphia.—p. 483.
*Congenital Dextrocardia. F. A. Willius, Rochester, Minn.—p. 485.
*Protozoal Infections of Intestines. R. Pollock and R. J. Pickard, San Diego.—p. 492.
*Case of Chronic Jaundice—Family Type. J. I. Johnston, Pittsburgh. —p. 500.
*Principle of Blood Grouping Applied to Skin Grafting. H. K. Shawan, Detroit.—p. 503.
*Differential Diagnosis Between Mitral Stenosis and Aortic Insufficiency. E. H. Goodman, Camp Jackson, S. C.—p. 509.
*Cardiothoracic Ratio: Index of Cardiac Enlargement. C. S. Danzer, Brooklyn.—p. 513.
*Clinical Studies in Cutaneous Aspects of Tuberculosis. III. Therapeutic Management of Tuberculids with Arsphenamin. J. H. Stokes, Rochester, Minn.—p. 522.
Prevalence of Trichomyces Infections in Western New York, with Special Reference to B. Fusiformis. R. R. Mellon, Rochester, N. Y. —p. 540.
Factor of Safety in Pulmonary Circulation. J. P. Simonds, Chicago. —p. 548.

Roentgen-Ray Intoxication.—This paper deals with the general constitutional reaction which follows prolonged exposures to the roentgen rays of the Coolidge tube. The experiments made by Hall and Whipple on dogs show the increase in nitrogen elimination and in blood nonprotein nitrogen which precedes fatal intoxication. Vomiting and diarrhea dominate the clinical picture until death, which, as a rule, follows on the fourth day. The blood nonprotein nitrogen commonly shows a marked increase (twice normal) on the day before death and often more than three times normal on the day of death. The elimination of urinary nitrogen is increased on the day following the roentgen-ray exposure and remains high until death, often an increase of 50 to 100 per cent. above the normal base line. The so-called roentgen-ray anaphylaxis or hypersensitiveness to a second properly timed roentgen-ray exposure finds no support in the authors' experiments. In fact, there is some evidence for a slightly increased tolerance to the second dose. Neither do the experiments yield any evidence of roentgen-ray nephritis.

Congenital Dextrocardia.—Three cases are cited by Willius in which this anomaly was discovered accidently. One patient presented herself for examination complaining of chest pains of the intercostal neuralgic type. A second presented herself for examination on account of a pelvic complaint. The third presented herself for examination on account of goiter. The electrocardiograms of the last two cases essentially confirm the findings recorded previously. Willius says that inversion of the deflections in Lead I is definite evidence of congenital dextrocardia with situs transversus; hence electrocardiography should be recognized as a valuable adjunct in the differential diagnosis of cardiac displacements.

Protozoal Infections of Intestines.—The incidence and behavior of these organisms in other then tropical regions and the pathogenicity and treatment of certain of the flagellates are discussed by Pollock and Pickard. They urge that all patients presenting obscure bowel symptoms, especially if anemic or achylous, should have the stools carefully searched for parasites. And it should be borne in mind that the pathogenicity and behavior of the intestinal protozoa vary under different conditions of climate, latitude, exercise, diet and medicinal treatment. The flagellates (monads) are capable of distinctly pathogenic behavior. The most satisfactory treatment they have applied to the monads up to the present is the double mercury treatment, the combined use of emetin hypodermically and arsphenamin intravenously. In a group of forty-six cases seen by the authors during the past year, with symptoms seeming to demand a careful search for intestinal parasites, nineteen, or 41.3 per cent., showed protozoal parasites, many times accompanied by other intruders.

Chronic Jaundice of Family Type.—A man and his sister presented exactly the same picture clinically. Their histories were practically the same, the man complaining only of a large leg ulcer besides the jaundice, and the sister complaining of dysmenorrhea in addition to her icterus. They were otherwise well. Johnston points out that the presence of uterine stenosis in the woman and a talipes equinus in the man may be suggestive hints of congenital factors present in both, some such factor producing hemolytic jaundice.

Blood Grouping Applied to Skin Grafting.—The clinical observations made by Shawan proved that autografts grow best. Isografts obtained from donors of the same blood group as the recipients or from Group IV donors became permanent takes and grew almost if not equally as well as autografts. Isografts where the donor and recipient were of different groups did not remain as permanent groups growths except when Group IV skin was used or when the recipient was a member of Group I. Group I recipients grew permanent skin from donors of all of the four groups and apparently equally well. Group IV skin grew permanently on recipients of all groups, but only Group IV grafts and autografts remained as permanent takes on Group IV recipients. Therefore it may be assumed that skin grafting obeys the principle of blood grouping, as in the transfusion of blood.

Diagnosis of Mitral Stenosis and Aortic Insufficiency.—The features which Goodman considers as being most in favor of the diagnosis of aortic insufficiency are: (1) displacement of the apex-beat; (2) heaving feel of the apex impulse to the palpating hand; (3) hypertrophy of the left ventricle; (4) vascular signs, i. e., marked pulsation of vessels, Corrigan pulse, capillary pulse, systolic tone in brachial, with arm above the head; (5) blood-pressure increase of pulse-pressure, marked discrepancy between the arm and the leg pressures. In favor of a mitral stenosis are: (1) loud snappy first sound at the apex unless marked by an insufficiency of the mitral valves; (2) absence of apical displacement and of cardiac hypertrophy; (3) systolic tap or shock to the palpating hand; (4) absence of vascular signs; (5) absence of any characteristic blood-pressure phenomena.

Cardiothoracic Ratio in Heart Enlargement.—The cardiothoracic ratio discussed by Danzer is based on the anatomic relationship that exists between the heart and its containing frame, the chest. Wherever a roentgen-ray laboratory exists the facilities are sufficient for this work. The method has been tried out by Danzer and others in a sufficiently larger number of cases (500 or more) to warrant its practicability and usefulness in the estimation of cardiac size, particularly in cases of moderate or early enlargement.

Arsphenamin in Cutaneous Tuberculosis.—This study deals with a group of twenty cases of various types of papulonecrotic tuberculid and erythema induratum in which arsphenamin was used with good effect by Stokes in combination with systemic regimen and roentgen therapy. Over half the cases thus treated had demonstrable tuberculosis, usually in the form of a lymphadenitis. Surgical treatment of the lymphadenitis in nine cases had not demonstrably affected the tuberculid. It would seem that the appearance or the persistence of a cutaneous tuberculid following reasonably complete surgery is an indication for a discontinuance of surgical treatment of the tuberculous focus, and the adoption of a medical means of fortifying the patient against the progress or recurrence of his tuberculous infection. The intravenous administration of arsphenamin appears to afford such a medical means of fortifying the patient's resistance to tuberculosis when combined with antituberculous hygiene and roentgen ray.

Stokes claims that arsphenamin offers an excellent means of treating selected cases of obscure tuberculosis, as evidenced by the presence of a tuberculid in the absence of a demonstrable focus. Its use in febrile, acute or rapidly progressive cases is not advised. Arsphenamin alone is apparently able to produce a striking effect on cutaneous tuberculids. Fifty-three per cent. of seventeen cases treated by Stokes have been completely cleared of lesions, and only 12 per cent. have failed to secure a definite improvement. Arsphenamin is also apparently instrumental in producing a marked constitutional improvement in these cases, evidenced especially by a gain in weight and the disappearance of the "rheumatic" symptoms. The effect of arsphenamin on the tuberculous adenitis where present is indeterminate, but probably not striking. An outdoor life, forced diet, correction of vascular abnormalities and stasis by elastic support, and careful extirpation of secondary foci of pyogenic infection in tonsils, teeth, etc., are subsidiary but important elements in a successful treatment.

Archives of Neurology and Psychiatry, Chicago

April 1, 1919, **1**, No. 4

*Disturbances of Spatial Orientation and Visual Attention, with Loss of Stereoscopic Vision. G. Holmes, London, England, and G. Horrax, Boston.—p. 385.
*Probable Etiologic Factor in Multiple Sclerosis. M. S. Woodbury, Clifton Springs, N. Y.—p. 408.
*Clinical Study of Psychoses Characterized by Distressed Perplexity. A. Hoch, Montecito, Calif., and G. H. Kirby, New York City.—p. 415.
Personality Tests Involving Principle of Multiple Choice. A. Myerson, Boston.—p. 459.
Spinal Cord Injuries in Warfare; W. F. Schaller, San Francisco.—p. 471.

Disturbances of Spatial Orientation and Visual Attention.—The chief symptom in the case cited by Holmes and Horrax was inability to orientate accurately in space objects perceived by either central or extra-central vision, and especially to recognize the absolute relative distances of things seen, though by touch and sound he localized sensible objects as readily as normal persons. His power of distinguishing and comparing lengths and sizes was similarly affected. Stereoscopic vision was abolished; he was unable to see tridimensional objects in perspective and to recognize depth in anything. These symptoms disturbed the performance of various actions in which he relied on sight for guidance. He also presented a severe disturbance of visual attention, which made him unable to perceive readily or at all objects outside macular vision when his attention was held by that on which his eyes were fixed, and a failure to explore space spontaneously with his eyes; yet objects which threw even large images in his retina were generally perceived whole. Further, he was unable to evoke topographic memories acquired in the past and to learn his way in new surroundings. Finally, he had various anomalies of the ocular movements and reflexes, as failure to fixate promptly objects seen, to accommodate near objects, and to blink reflexly to threatening gestures. His visual fields were reduced by blindness of both lower quadrants, but the acuity of central vision was good.

Focal Infection Cause of Multiple Sclerosis.—The basis of Woodbury's paper rests on the observation of six cases of multiple sclerosis. All of the six were symptomatically typical. Two were relatively early, the others were more advanced. Spasticity of both legs and bilateral Babinski sign were present in all; abdominal reflexes were uniformly absent; all, except one early case, showed pallor of the temporal half of each disk; nystagmus and intention tremor were present in all. All had complained of bladder irritability which had appeared early in each instance; incoordination of upper as well as lower extremities was present in all. Sensory symptoms were practically absent. The only possible etiologic condition regionally common to all was some type of inflammatory disease of the upper respiratory tract. Every one of the six patients had obviously chronically infected tonsils which Woodbury thinks is worthy of note. This was the one pathologic feature in addition to the disease of the nervous system which was common to all, and the only one which seemed to give any definite inkling of etiology except that five of the patients had also—as dentograms revealed—peridental infection. This, however, was not strikingly extensive, either in the number of teeth involved or in the degree of involvement. No dental observations were made on the other case. Therefore, Woodbury offers the theory of a possible localized infective source, distributing its toxic products through the circulation, as a cause of multiple sclerosis. Four of these patients had their tonsils removed. Two relatively early cases report themselves as "well," despite the fact that both had previously been greatly hampered by motor incapacity and bladder trouble; one of these developed infected antrums after the extraction of periabscessed teeth, but reports a favorable convalescence. In one rather advanced case, four months after observation, the patient is walking without a cane for the first time in several years. In another advanced case, the patient walks with much greater ease, one and one-half years after observation; is less easily fatigued, and pursues his work in the lumber business daily. These four are all leading active, useful lives.

Study of Psychoses.—Seven cases which presented as the most prominent symptoms a more or less pronounced perplexity associated with distress are reported by Hoch and Kirby. They believe that these attacks represent a definite reaction type, because in spite of certain differences, the cases are remarkably uniform.

Archives of Ophthalmology, New Rochelle, N. Y.

March, 1919, **48**, No. 2

Plastic Surgery of Eyelids After War Injuries. T. H. Butler, Birmingham, England.—p. 103.
Injuries of Superior Oblique Muscle. A. C. Snell, Rochester, N. Y.—p. 111.
Carcinoma of Orbit. A. Knapp, New York City.—p. 120.
Pupil in Glaucoma. J. Dunn, Richmond, Va.—p. 126.
Device for Examination of Distant Stereoscopic Vision for Form and Colors. M. Cohen, New York City.—p. 142.
Jaw Winking Phenomenon and its Explanation. A. Lutz, Habana.—p. 144.

Arkansas Medical Society Journal, Little Rock

March, 1919, **15**, No. 10

Extracantonment Zone Sanitation: Camp Pike and Eberts Field, Arkansas. J. C. Geiger, R. E. Tarbett, C. C. Pierce, U. S. P. H. S. —p. 181.

Boston Medical and Surgical Journal

April 3, 1919, **180**, No. 14

Natural and Artificial Carbon Dioxid Waters in Cardiac Diseases. S. Baruch, New York City.—p. 384.
Pneumonia and Empyema. H. Gray, Camp Devens, Mass.—p. 388. To be continued.

Georgia Medical Association Journal

January, 1919, **8**, No. 9

Syphilis Clinic of Emory University, Atlanta, Ga. W. B. Emery, Atlanta.—p. 171.
So-Called Marginal Eczema. C. Swanson, Atlanta.—p. 172.
Torn Cervix vs. Uterine Inertia. E. R. Corson, Savannah.—p. 174.

Iowa State Medical Society Journal, Des Moines

March 15, 1919, **9**, No. 3

Hospital Standardization. P. B. McLaughlin, Sioux City, Ia.—p. 69.
Mesotendons of Ankle. H. J. Prentiss, Iowa City.—p. 71.
Physiologic Methods of Tendon Transplantation. A. Steindler, Iowa City.—p. 75.
Diagnosis of Stomach Diseases. J. F. Studebaker, Fort Dodge.—p. 78.
Paranoia, with Special Reference to Paranoid Tendencies of Kaiser. T. B. Throckmorton, Des Moines.—p. 82.

Journal of Cutaneous Diseases, Chicago

March, 1919, **37**, No. 3

Pemphigus in an Orang-Utan Infested with Strongyloides (Intestinalis?) and Dying from Advanced Tuberculosis. F. D. Weidman, Philadelphia.—p. 169.
Keratolysis Exfoliativa. G. W. Wende, Buffalo.—p. 174.
Influenza Alopecia. M. J. Morrissey, Hartford, Conn.—p. 177.
Roentgen Ray and Radium in Treatment of Basal Cell Epithelioma. G. M. MacKee, New York City.—p. 179.

Journal of Orthopedic Surgery, Boston

April, 1919, **1**, No. 4

*Tendon Transplantation of Foot. Physiologic Method. A. Steindler, Iowa City.—p. 187.
Impairment of Function of Hand due to War Injuries. C. R. Metcalf, Concord, N. H.—p. 198.
Relationship of Fracture of Lower Epiphysis of Tibia to Arrest of Growth of Bone. R. C. Elmslie, London, England.—p. 215.
Results Obtained by Treating Weak Feet Along Military Lines Among Civilians. L. C. Donnelly, Detroit.—p. 219.
Splint Devised for Treatment of Stiff Metacarpo Phalangeal Joints. F. E. Lewis, Liverpool, England.
Changes Produced in Growing Bone After Injury to Epiphyseal Cartilage Plate. S. L. Haas, San Francisco.—p. 226.

Tendon Transplantation of Foot.—Of these forty-eight cases, cited by Steindler, thirty-six showed good result, or 75 per cent. The rest are divided into fair, poor, and undetermined on account of too recent operation. By eliminating all cases in which less than one year had elapsed between operation and time of writing, there remain twenty-four cases which have been observed one year after operation. Of these, seventeen cases, or 70 per cent., showed good result. By again eliminating all cases which are still in some kind of supporting contrivance, as cast or brace, we have at present thirteen cases, or 57 per cent., which have definitely shown good operative results. Of the four remaining in case it is to be expected that their present good result will be added to this number, making a definite percentage of good results, reaching the neighborhood of 70 per cent. for all cases. The technic of the operation done was described by Steindler in previous publications.

Laryngoscope, St. Louis

March, 1919, **29**, No. 3

Tic Douloureux, With Special Reference to Treatment by Alcohol Injections.—E. R. Faulkner, New York City.—p. 130.
Ankylosis of Crico-Arytenoid Articulation: Case Presenting Involvement of Both Joints and Requiring Tracheotomy. T. J. Harris, New York City.—p. 139.
Two New Instruments for Reaming Upper End of Eustachian Tube in Radical Mastoid Operation. A. Kahn, New York City.—p. 143.
Vestibular Reactions in Central Nervous Diseases: Report of Three Cases. G. H. Willicutt, San Francisco.—p. 145.
Vincent's Angina. H. A. Kiefer, Los Angeles.—p. 150.
Parosmia. W. H. Dudley, Los Angeles.—p. 156.
Plea for Early Training of Defective Speech. M. S. Stell, Philadelphia.—p. 160.
Aurist and Lip-Reading. E. B. Kessler, Omaha.—p. 163.
Alar Collapse Following Septal Abscess in Infant. D. N. Husik, Philadelphia.—p. 166.

Medical Record, New York City

April 5, 1919, **95**, No. 14

Cancer Problem—A Chapter in Medicine. I. Levin, New York City. —p. 551.
Physical Exercise in Later Life. R. E. Coughlin, Brooklyn.—p. 558.
*Auscultatory Percussion. A. L. Benedict, Buffalo.—p. 561.
Nasal Cauterization in Treatment of Certain Chronic Affections (Method of Pierr Bonnier). A. Leprince, Nice, France.—p. 564.

Auscultatory Percussion.—Benedict describes this method of percussion which he feels is not used as much as it deserves to be. He says that although the general principles involved are the same as for any other diagnostic method based on hearing, it can not be acquired and judged like a mere novel detail of ordinary percussion or of auscultation, but requires considerable experience and practice, even if one be skilful.

Michigan State Medical Society Journal, Grand Rapids

March, 1919, **18**, No. 3

Hypophysis and Hypophysial Disease. E. W. Schnoor, Grand Rapids. —p. 87.
Organic and Functional Achylia Gastrica. J. E. Meengs, Grand Rapids. —p. 96.
One Hundred and Seventy-Seven Goiters in Five Hundred and Eighty-Three Registrants. S. Levin, Lake Linden.—p. 98.
Vertebral Disease as Cause of Referred Pain: Report of Cases. J. B. Jackson, Kalamazoo.—p. 104.
Treatment of Empyema. C. D. Brooks, Detroit.—p. 107.
Michigan's Cooperation with the Government in Venereal Disease Problem. H. R. Varney, Detroit.—p. 110.

Military Surgeon, Washington, D. C.

April, 1919, **44**, No. 4

Management of Venereal Disease at Camp Meade, Md. G. L. Qualls and S. L. Meylackson, M. C., U. S. A.—p. 331.
*Treatment in Relation to Mechanism of Shell Shock L. C. Frost, M. C.—p. 350.
*Aero Ambulance. S. M. Strong, M. C.—p. 361.
Squad Room Barracks or Unit Barracks? C. Lynch and J. G. Cumming, M. C.—p. 363.
Prevention of Trench Fever Among Hospital Personnel: Successful Method Applied in Base Hospital in France.—p. 370.
Hodgen Suspension Splint. H. G. Mudd, M. C.—p. 376.
*New Cystoscopic Findings in Cases of Enuresis. I. A. Pelzman, M. C.—p. 383.
Six Hundred and Thirty-Eight Herniotomies. W. T. Dodge, Camp Sherman, Ohio.—p. 385.
Brief Résumé of Roentgen Ray Work in an Evacuation Hospital. I. H. Lockwood, M. C.—p. 389.

Treatment of Shell Shock.—In Frost's opinion the treatment of shell shock should be governed by the following rules: (1) It should be given only by medical officers specially trained in this work, one of whom should be stationed at each advanced aid station; (2) it should be instituted at the earliest possible moment; (3) it should be directed away from physical symptoms and toward psychic readjustment; (4) and most important, it must be carried on in constant conscious relation to the cause and mechanism of the condition as exemplified in the individual case.

Aero Ambulance.—Strong describes his design of aero ambulance in use at Eberts Field, Lonoke, Ark., for the transportation of patients. It has proved highly efficient and satisfactory. The ambulance is a remodeled Curtis biplane type J. N. 4 D, and it can be loaded in the same length of time ordinarily consumed in placing a single patient in the present type of automobile ambulance. Room is made for the patient in the rear cockpit. Emergency equipment is carried in a square canvas pack (similar to the present Hospital Corps pouch), with a strap so that it can be slung over the shoulder. The pack is suspended at the back of the front seat in the rear cockpit. A fire extinguisher and wrecking tools are also on board. When traveling to the scene of a wreck, the medical officer is seated in the rear cockpit and, being supported by a leather cushion, this permits him to be in a very comfortable position and enables him to act as an observer to assist in locating the wreck. The ship is well balanced, the load being distributed in the rear cockpit so near the normal load bearing points as not to make the ship tail-heavy, and requiring but few adjustments.

Cystoscopic Findings in Enuresis.—In this preliminary report by Pelzman which is based on an examination of sixty cases of enuresis, a new cystoscopic picture is reported. In the routine cystoscopic examinations at the base hospital at Camp Meade, Maryland, over a period of five months, forty cases of enuresis were encountered. The history in each of these cases was practically identical. The condition starts in infancy. There was always a history of at least one other member of the family affected by the same condition, and in several, more than one additional member of the family was so affected. The men were neurotic, and of an unstable type; almost without exception they would state that they were nervous. Cystoscopic examination disclosed no residual urine—the bladder was filled with from 300 to 400 c.c. of sterile water. A trabeculated bladder was found, trabeculation varying in degree from a mild to a very marked type. In most instances the floor of the bladder was involved, the trabeculations radiating outward and posteriorly from the ureteral orifices; in the more marked cases the entire bladder wall presented this picture. The findings were practically the same as those presented by the trabeculated bladders in tabetics. Very few of the cases showed any evidence of cystitis, although in several there were signs of a moderate degree of trigonitis.

Modern Hospital, Chicago

March, 1919, **12**, No. 3

Benjamin Stickney Cable Memorial Hospital, Ipswich, Mass. E. E. Stevens, Boston.—p. 157.
Hospital Library and Some of Its By-Products. E. Green, St. Louis.—p. 161.
Brave Blinded Soldiers of St. Dunstan's Hospital. A. Pearson, England.—p. 163.
Attitude of Middle Ages Toward Crippled and Disabled. D. C. McMurtrie, New York City.—p. 164.
Joint Purchase of Hospital Supplies. T. E. McGarr, Albany, N. Y.—p. 168.
Reeducation for Maimed and Disabled Officers and Privates. J. O. Cobb, Chicago.—p. 170.
Hospitals of Port of Embarkation. New York Correspondent of Modern Hospital.—p. 172.
Farming and Gardening in State Institutions. E. D. Whipp, Springfield, Ill.—p. 175.
Children's Pavilion at Sharon Sanatorium. W. A. Griffin, Sharon, Mass.—p. 176.
Meaning of Case Records. J. M. Baldy, Philadelphia.—p. 178.
Hospital Accounting. C. A. Porter and H. K. Carter Modern Hospital Staff.—p. 181.

Nebraska State Medical Journal, Norfolk

March, 1919, **4**, No. 3

Bureau of Ethics and Standardization for Medical Profession of Nebraska. C. A. Roeder, Omaha.—p. 63.
Treatment of Empyema by Closed Method. C. Emerson, Lincoln.—p. 65.
Antiseptics in Surgery. J. S. Welch, Lincoln.—p. 67.
Fractures of Arm (Simple and Compound): Value of Dakin and Dichloramin-T Solution in Treatment of Infected Cases. W. H. Pruner, Omaha.—p. 70.
End Results of Tonsillectomy. D. D. Sanderson, Lincoln.—p. 75.
Influenza. H. H. Waite, Lincoln.—p. 76.
Dizziness from Ocular Disturbances. H. B. Lemere, Omaha.—p. 80.
Aural Vertigo. A. R. Knode, Omaha.—p. 82.
Cardiovascular Vertigo. A. Sachs, Omaha.—p. 86.

New Jersey Medical Society Journal, Orange

March, 1919, **16**, No. 3

History of Influenza. E. J. Ill, Newark.—p. 73.
Influenza Epidemiology. C. V. Craster, Newark.—p. 74.
Bacteriology of Influenza. R. N. Connolly, Newark.—p. 76.
Pathology of Influenza. J. W. Gray, Newark.—p. 78.
Clinical Aspect of Influenza. J. H. Rosecrans, Hoboken.—p. 79.
Treatment of Influenza. W. Petry, Newark.—p. 80.
Complications of Influenza. W. F. Keim, Newark.—p. 82.
Cult of Cold. C. D. Bennett, Newark.—p. 84.
New Handling of an Old Problem—Tuberculosis. M. J. Fine, Newark.—p. 87.

New York Medical Journal, New York

April 5, 1919, **109**, No. 14

Alkali Treatment Applied to Acidosis of Epidemic Influenza. T. C. Ely, Philadelphia.—p. 573.
Encephalitis in Infant, Following Influenza. Z. Sharfin, New York City.—p. 576.
"Dear Brutus": Dramatist's Use of the Dream. S. E. Jelliffe and L. Brink, New York City.—p. 577.
Case of Sarcoma in an Infant. H. B. Mills, Philadelphia.—p. 583.
Influenza Pneumonias as Studied with Roentgen Ray. J. S. Diamond, New York City.—p. 584.
Illuminated Trap for Night Flying Insects. W. O. Owen, Washington.—p. 590.
Artificial Pneumothorax in Pulmonary Tuberculosis. L. S. Peters, Albuquerque, N. M.—p. 591.
Army Hospital Trains. C. A. Mayo, New York City.—p. 594.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 597. To be continued.

South Carolina Medical Association Journal, Greenville

March, 1919, **15**, No. 3

Observations on One Thousand Four Hundred Cases of Pneumonia. G. A. Clark, Camp Jackson, S. C.—p. 386.
Annual Report Field Secretary State Board Health. A. I. Rembert, Columbia.—p. 394.
Annual Report of Health Officer Greenville County. S. J. Taylor, Greenville.—p. 398.
Heat in Treatment of Cancer of Uterus. W. W. Fennell, Rock Hill, S. C.—p. 399.
Diphtheria of Fauces, Larynx, Trachea and Bronchi. E. W. Carpenter, Greenville.—p. 404.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

March, 1919, **27**, No. 3

Nitrous Oxid-Oxygen Anesthesia in Major Surgery. F. K. Camp, Oklahoma City.—p. 49.
Postoperative Pneumonia. J. Worley, Dallas, Texas.—p. 56.

Southern Medical Journal, Birmingham, Ala.

March, 1919, **12**, No. 3

*Clinical Value of Psychologic Tests in Examination and Diagnosis of Mental Cases. E. S. Fearing, Norfolk, Va.—p. 115.
Study of Digestive Psychoses. G. M. Niles, Atlanta, Ga.—p. 120.
Importance of Routine Wassermann in Tuberculosis. A. G. Shortle, Albuquerque.—p. 123.
Public Health Service Problem for Nationa-Wide Control of Venereal Diseases. C. C. Pierce, Washington.—p. 130.
Community Status as Measure of Frreedom from Communicable Disease. P. H. Bryce, Ottawa, Canada.—p. 135.
Way of Combating Soil Pollution as Used by One of North Carolina Cooperating Counties. J. S. Mitchener, Kinston, N. C.—p. 137.
Peripheral Nerve Injury in War Surgery: Routes of Approach. C. S. Venable, San Antonio.—p. 139.
Removal of Uterine Stones by Noncutting Method. E. P. Merritt, Atlanta.—p. 143.
*Lymphangioma of Chest in Child. V. B. Philpot, Houston, Miss.—p. 147.
Bone and Cartilage Grafting in Correction of External Deformities of Nose. L. Cohen, Baltimore.—p. 151.
Ocular Syndrome of Dental Origin. H. H. Martin, Savannah, Ga.—p. 157.
Medicine and Surgery of Twentieth Century Viewed from Several Angles. B. C. Keister, Roanoke, Va.—p. 160.

Value of Psychologic Tests in Mental Cases.—Fearing is firmly of the opinion that an ideal situation is presented when a psychologist and a medical man collaborate on mental cases. This is especially true in the field of juvenile psychopathies and delinquents. Furthermore, that many of the puzzling cases which seem to involve some degree of nervous or mental inferiority and which present various contradictory subjective symptoms should not be diagnosed without reference to the scores resulting from properly conducted psychologic tests. A knowledge of such tests is not the only essential. They are only valuable when conducted by an examiner trained in the methods of laboratory psychology.

Lymphangioma of Chest of Child.—Philpot's patient was a little girl, aged 4 years. She was born with two small tumefactions—one below the axilla and one ju[illegible] above the clavicle to the left of the neck. The tumors g[illegible]ut little at first, [illegible] very rapid [illegible]th took pla[illegible]d constitutional [illegible] manifest[illegible] patient bec[illegible] weak and emaciated and at times having abnormally high temperature which was supposed to be due to some inflammation in the tumor. An incision was made in the tumor below the axilla, hoping to remove it, sac and all; but after draining the fluid out, it was found that the sac extended deep between the ribs and formed pockets all through the upper left chest, one of the deepest pockets extending to the scapula behind and another, between the clavicle and scapula, forming the large cyst to the left of the neck above. The sacs were adherent to the bones everywhere and all the sacs communicated; hence, drainage of all was accomplished. About a quart of blue fluid was drained off. After three curettings and swabbings a complete cure was effected.

Surgery, Gynecology and Obstetrics, Chicago

April, 1919, **27**, No. 4

Surgical Treatment of Empyema. A. V. Moschcowitz, M. C.—p. 337.
Empyema at Camp Jackson, S. C. C. Eggers, New York City.—p. 348.
Treatment of Purulent Pleuritis (Empyema) at Camp Pike Base Hospital. B. P. Diedrich, Camp Pike, Ark.—p. 363.
Empyema. J. G. Sherrill, Louisville, Ky.—p. 371.
Negative Pressure Vs. Free Open Drainage in Thoracic Empyema. J. C. O'Day, Honolulu, Hawaii.—p. 375.
Empyema Problem. E. G. Beck, Chicago.—p. 379.
Perforated Gastric and Duodenal Ulcers. H. M. Richter, Chicago. —p. 399.
*Are We Justified in Removing a Comparatively Healthy Gallbladder? W. H. Magie, Duluth, Minn.—p. 402.
*Parotitis as Postoperative Complication. C. U. Collins, Peoria, Ill. —p. 404.
Indications for Operation of Cranial Decompression. W. Sharpe, New York City.—p. 407.
Interposition Operation for Cure of Prolapsus Uteri and Cystocele. F. W. Johnson and L. E. Phaneuf, Boston.—p. 418.
*Ununited Fracture of Patella and Olecranon. F. H. Albee, New York City.—p. 422.
Some Technical Points in Gastro-Enterostomy and Gastroplication. A. Schwyzer, St. Paul, Minn.—p. 428.
Surgical Treatment of Goiter. M. F. Porter, Fort Wayne, Ind.—p. 431.

Are We Justified in Removing Healthy Gallbladders?—Cholecystectomy, in Magie's opinion, should be resorted to (1) in all cases of hydrops with stricture of the cystic duct; (2) in many cases of acute or threatened gangrene of the gallbladder; (3) in all cases complicated with embedded stones in the cystic duct with ulceration produced by contact with the embedded stone that when healed would probably cause the stricture; (4) in all very thick-walled gallbladders due to fibrous or calcareous degeneration; (5) in all cases of ulceration due to pressure of large stones; (6) in cancer of the gallbladder where the disease is limited to the gallbladder.

Parotitis as Postoperative Complication.—A trifle over one tenth of 1 per cent. of Collins' patients developed postoperative parotitis, and one died while waiting for operation. A study of these cases showed that postoperative parotitis is more apt to occur after abdominal operations than operations on any other part of the body. Its development is favored by a dry condition of the mouth and a lack of fluids in the body. The infection usually ascends through Stenson's duct. In patients whose abdominal condition makes it necessary to withhold food and drink from the mouth and stomach for a time, prophylactic treatment should be instituted. Collins advises that the mouth should be kept clean and moist by its own secretions and the body should be supplied abundantly with water. A good way to excite the secretions of the mouth and to keep a current of saliva flowing down Stenson's duct is to allow the patient to suck a stick of lemon candy after operation. A very accurate and effective way to supply the body with fluid is to administer salt solution by hypodermoclysis. If the prophylactic treatment fails and parotitis develops and the inflammation is increasing, or is no better by the third or fourth day, the gland should be uncovered by a free incision and punctured in several places with blunt forceps and the incision packed with wet sterile gauze as suggested by Blair.

Ununited Fracture of Patella and Olecranon.—In these cases Albee uses an inlay graft. For the patella cases the graft is H-shaped and is taken from the head of the tibia. For the olecranon a sliding graft is used.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 15, 1919, **2**, No. 3037

Half a Century of Smallpox and Vaccination. J. C. McVail.—p. 297.
*Functional Paralysis of Diaphragm in Two Cases with Acceleration of Respiration. A. Watson and J. S. Meighan.—p. 303.
*Pneumothorax Paradox. F. C. Coley.—p. 304.
*Case of Artificial Double Pneumothorax. A. McCallum.—p. 305.
Epidemic Pneumonic Influenza as Seen in Malaya. G. W. Scott. —p. 305.
*Occurrence of Morgan's Bacillus in Chronic Discharging Wounds. H. E. Whittingham.—p. 306.

Functional Paralysis of Diaphragm.—Attention has been directed recently to the rapid, shallow type of breathing occurring in late cases of gassing, and Haldane has associated the condition with an exaggeration of the Hering-Breuer reflex. The condition has also been observed in cases in which nervous symptoms have developed as the result of shell shock or other disturbances. The observations made by Watson and Meighan in two cases seem to indicate that a paresis or paralysis of the diaphragm, the result of functional disturbance of the center of the phrenic nerves, may account for the acceleration in breathing in some cases. Tracings taken from the two patients seemed to indicate a failure in the action of the diaphragm, and the authors suggest that it is probable that the acceleration in rate was due to this. They found that no discomfort was caused by breathing at 75 a minute, but when the rate was increased to about 170 a minute, it could not be maintained for any length of time. So long as it was maintained it showed no decrease in the abdominal movements.

Pneumothorax Paradox.—Coley calls attention to the fact that an artificial pneumothorax may relieve shortness of breath. The explanation he gives of this paradox is that the dyspnea in phthisis is not mainly mechanical and due to the amount of lung tissue which is disabled by structural disease: it is toxic. The artificial pneumothorax reduces the output of toxin.

Artificial Double Pneumothorax.—McCallum was not a little surprised to find a patient breathing quite comfortably and moving about with no embarrassment, although, in the routine treatment of a case of pulmonary tuberculosis by artificial pneumothorax he had produced a double pneumothorax of some considerable size through a patency existing between the right and left pleural spaces.

Morgan's Bacillus in Chronic Discharging Wounds.—Whittingham noted that certain deep wounds, which were moderately clean when first seen, gradually went from bad to worse in spite of careful treatment. These cases ultimately developed chronic discharging sinuses, the discharge having a peculiar odor very like that of a bacillary dysentery stool. Several of these patients were obviously suffering from a toxemia; blood cultures performed were negative. Cultures made from wound discharges of six of these cases revealed the presence in all of an organism identical with Morgan's No. I bacillus. This organism was the predominant one in most instances, but other organisms, such as streptococcus and staphylococcus, were numerous. Autogenous vaccines of Morgan's bacillus, given in two of these cases, greatly improved the wound and general toxic condition of the patient. In two cases there was a marked local and general reaction after the first inoculation, but when this passed off there was a distinct improvement in the condition of the patient.

Dublin Journal of Medical Science

March, 1919, **147**, No. 567

Half a Century's Review of Marriages and Births in Ireland. W. J. Thompson.—p. 101.
Endothelioma of the Ovary. J. S. Ashe.—p. 119.

Glasgow Medical Journal

March, 1919, **91**, No. 3

*Hernia Across Lesser Sac of Peritoneum. J. H. Pringle.—p. 129.
Rickets. L. Findlay.—p. 147.

Hernia Across Lesser Sac of Peritoneum.—Four patients were operated on by Pringle on account of well-marked gastric symptoms, and in each of them it was found that practically the whole of the small bowel had herniated into and across the lesser sac of peritoneum. The only portion that had not been herniated was the last 6 to 8 inches of the ileum which formed the emerging coil of the bowel. In each of them the bowel had entered the lesser sac through that portion of the transverse mesocolon which is bounded by the vascular arch formed by the middle and left colic arteries, i. e., through that part of the mesocolon where it is usually divided when one makes a posterior gastro-enterostomy. In two of the patients the bowel escaped from the lesser sac into the general peritoneal cavity again through the gastrohepatic omentum, and in the other two through the gastrocolic ligament. Pringle has found records of only five other cases which seem to have any bearing on the subject, and of these, only two were operation findings.

Journal of Pathology and Bacteriology, Edinburgh and London

November, 1918, **22**, No. 2

Biochemistry of Pathogenic Anerobes: V. Vibrion Septique. C. G. L. Wolf.—p. 115.
*Character and Properties of "Reading" Bacillus, on Which a New Method of Treatment of Wounds has been Based. R. Donaldson.—p. 129.
Arthritis Deformans and Spondylitis in Ancient Egypt. A. Ruffer.—p. 152.
Strains of Meningococci Hypersensitive to Agglutination. H. W. C. Vines.—p. 197.
*Studies on Streptococci Recovered from Sick and Wounded Soldiers in France. R. H. Malone, and L. J. Rhea.—p. 210.
Simple Apparatus for Isolating Single Organisms. R. H. Malone.—p. 222.

Rôle of "Reading" Bacillus in Wound Treatment.—The new method of treatment for gunshot wounds described by Donaldson depends on the utilization of a spore-bearing anaerobe of a saprophytic nature, a member of the proteolytic group of anaerobic organisms, which is probably present in the majority of gunshot wounds, but whose activities are generally held in abeyance by the system of wound dressing usually adopted. Donaldson has named it the Reading bacillus. It is highly resistant to heat and drying, and grows best in a slightly alkaline medium. It most closely resembles *B. sporogenes* (Metchnikoff). It is nonpathogenic for animals as well as for man when introduced into septic wounds. It does not attack living tissues. The use of salt is not necessary for the successful treatment of gunshot wounds, as was thought by those who advocated the salt-bag method. The success depends rather on the activity of this particular bacillus under conditions favorable to its growth and not on the salt. The rationale of the method depends not on inhibition by the Reading bacillus of the growth of pathogenic organisms in the wound either by reason of the formation by the bacillus of any inhibitory organic acid, or by the production of any bacteriolytic ferment. It acts, however, by virtue of its proteoclastic enzymes as an organic catalyst which hydrolyzes the substrate of dead protein. It distintegrates the protein base from which pathogenic organisms operate, and while so doing, does not itself give rise to fresh toxic substances. Not only so, but it is probably able to hydrolyze also the toxic degradation products of other organisms. In support of this theory a résumé is given of experiments on tetanus and other toxins, which show that the Reading bacillus, out of a series of organisms investigated, is alone able to reduce the toxicity of these toxins. There is one exception, namely, *B. sporogenes* (Metchnikoff), which, however, does not appear to be so potent in this direction as is the Reading bacillus. Donaldson suggests that this ability to modify a toxin like that of tetanus may prove to be of value as a means of differentiating various types of proteolytic organisms, while it introduces new ideas in regard to the biologic processes going on in septic gunshot wounds. Donaldson has termed his method the biologic method.

Studies on Streptococci in Relation to Wound Treatment.—The work done by Malone and Rhea was undertaken primarily with the hope that they might be able to assist the surgeon in forming an opinion with regard to the proper surgical procedure, subsequent treatment and prognosis in cases of streptococcal infection; for all of these depend in some degree on the particular type of infecting organism. Twenty-five of the cases studied were analyzed. In these the lesions chosen for special study bore an indirect connection with the track of the missile and with the outside or contained streptococci in pure, or nearly pure, culture. In direct injuries of the knee joint and indirect injuries with fracture of the femur or tibia, streptococci are usually found before the fifth day. In secondary infections, when there has been no fracture into the joint, streptococci are recovered from the knee-joint fluid from the eighth to the twentieth day. In thoracic injuries with infected hemothorax, these organisms are found between the seventh and fourteenth day after injury. Nonhemolytic streptococci are an uncommon cause of the surgical complication of wounds, except in cases of hemothorax, where they are usually of the types found normally in the respiratory tract. *Streptococcus pyogenes* is the type most commonly found in infected wounds. It is also the most pathogenic. The evidence to support the latter view is as follows: Of eight cases of infection in the knee joint, five developed secondary abscesses in the thigh or calf. *S. pyogenes* was found in the knee fluid and abscesses in each of these cases. Of three cases of infection in the knee joint which required amputation, two contained *S. pyogenes*. Four cases of infected hemothorax ended fatally; three of these were due to *S. pyogenes*. This organism was recovered from the three cases of infected open wounds of the soft tissues, which were complicated by an infected hematoma or abscess. There was only one serious case of infection in the knee joint that was not caused by *S. pyogenes*. There was only one mild case of an infected knee joint in which *S. pyogenes* was the causative agent, and this case had the advantage of very early surgical treatment. So far as streptococci are concerned in the surgical complications of wounds of war, the type which is most common, and leads to the most serious results, is the same as that encountered in civil surgery.

Journal of State Medicine, London

March, 1919, **27**, No. 3

Prevention and Arrest of Venereal Disease in Army, At Royal Institute of Public Health. L. G. Adami.—p. 67.

Lancet, London

March 15, 1919, **2**, No. 4985

Experimental Investigation on Rickets. E. Mellanby.—p. 407.
Chemotherapy in Cutaneous Tuberculosis: Two Cases Treated with Ellis's Picric-Brass Paste. H. J. Gauvain.—p. 412.
*Picric Brass Preparations in Treatment of Lupus and other Forms of Tuberculosis. H. A. Ellis.—p. 415.
*Hysterical Perpetuation of Symptoms. C. H. L. Rixon.—p. 417.
*Influenza in Woolwich District. J. A. B. Hicks, and E. Gray.—p. 419.
Influenza Epidemic in British Guiana. F. G. Rose.—p. 421.
*Influenzal Intra-Abdominal Catastrophes, R. E. Smith.—p. 421.
Intravenous Iodin in Influenzal Bronchopneumonia. D. M. Baillie.—p. 423.
Spontaneous Rupture of Ovarian Cyst. D. N. Kalyanvala.—p. 423.
Nystagmus Caused by Mustard Gas. R. P. Ratnakar.—p. 423.

March 22, 1919, **2**, No. 4986

Half a Century of Smallpox Vaccination. J. C. McVail.—p. 449.
Future of Tuberculosis Problem. P. C. Varrier-Jones.—p. 453.
Y. M. C. A. Agricultural Training Colony, Kinson, Dorset. N. D. Bardswell.—p. 456.
Rat-Bite Fever: Two Cases Treated with Apparent Success by Single Dose of Novarsenobenzol Intravenously. R. V. Solly.—p. 458.
Prophylactic Treatment of Constipation in Children. V. Borland.—p. 459.
Double Resection of Bowel in Four Successful Cases of Gunshot Injury. G. Taylor.—p. 461.
Case of Acute Ascending Myelitis. D. K. Adams.—p. 462.
Two Cases of Intermittent Hydrops Articulorum. R. MacLelland.—p. 463.
Scarlet Red Powder as Tissue Stimulant. A. J. Turner.—p. 463.

Picric-Brass Preparations in Treatment of Lupus.—The combination used by Ellis is formed by combining basic copper sulphate with basic zinc sulphate in the proportion of 86 per cent. basic copper to 14 per cent. basic zinc.

Hysterical Perpetuation of Symptoms.—Cases are cited by Rixon to illustrate the hysterical perpetuation of symptoms long after the original causes for them had disappeared. In a multiplicity of conditions this is liable to occur, especially in those which run a chronic course; nerve suture, neurolysis and capsulotomy of a traumatic neuroma especially are mentioned. Disordered gaits are perpetuated after fractures and injuries of the lower limbs; sciatica is also especially liable to produce this condition of affairs, and many other diseases with a chronic or semichronic course. Several factors help in suggesting the perpetuation of symptoms, as, for instance, the use of crutches and sticks. Many other things may be the means of suggesting a perpetuation of a disability, and in some cases it is due to autosuggestion.

Bacteriology of Influenza Cases.—*B. influenzae* was present in the sputum examined by Hicks and Gray by direct film in 70 per cent. of cases and by culture in 75 per cent. of cases. Pneumococcus was present in 100 per cent. Other organisms of the *M. catarrhalis* type were present, and mouth organisms. *B. influenzae* was present in nasopharyngeal swabs in 80 per cent. of cases. In pleural fluids they found a pleomorphic streptococcus having many characteristics of the pneumococcus, but often occurring in chains of great length. Some cultures showed hemolytic properties, others did not. The authors regard this as being of *S. mucocus* type. A leukopenia was usually present in severe or fatal cases. In the average pneumonic cases a moderate polymorphonuclear leukocytosis was present. Postmortem and histologic appearances showed the disease to be an acute capillary bronchitis and alveolitis.

Influenzal Intra-Abdominal Catastrophes.—Three points have been observed in the influenzal pseudo-abdominal catastrophe which differ from the true surgical abdominal lesion. (*a*) The movement of the alae nasi. In cases of influenza with acute abdominal pain, even when no physical signs have appeared in the lungs and the respirations are only slightly increased, if the alae nasi are working, the condition is never abdominal. It occurs only in late true abdominal lesions when general peritonitis is well advanced. The movement of the alae nasi may not be very marked when the patient is recumbent, but can be elicited with a little exertion. (*b*) Dulness in the flanks is never present in influenzal pseudocatastrophes except in Class A, in which it is an early sign. (*c*) The facies of the influenzal victim dominates the scene. The anxious terror-stricken look of the true abdominal lesion is not present, as a rule. The anxiety is more lethargic and resigned, and of the medical rather than the surgical type. Smith emphasizes that in some cases an unusually high temperature associated with acute abdominal pain should be regarded with suspicion by the surgeon.

Medical Journal of Australia, Sydney

Feb. 1, 1919, **1**, No. 5

Phagodenic Ulcer of Warm Climates. W. McMurray and F. O. Stokes.—p. 87.
Topography of Taree District. S. R. Beatty.—p. 89.
Fatal Case of Poisoning by Large Dose of Heroin Hydrochlorid. W. R. Boyd.—p. 91.

Feb. 15, 1919, **1**, No. 7

Operative and Reeducative Treatment of Spastic Paralysis. N. D. Royle.—p. 125.
Mechanism for Regulation of Acid-Base Equilibrium of System and Its Bearing on Clinical Medicine. W. F. Litchfield.—p. 127.
Influence of Some Modern Antiseptics on Treatment of Infected Wounds. H. S. Stacy.—p. 130.

Sei-I-Kwai Medical Journal, Tokyo

Jan. 10, 1919, **38**, No. 1

*Fate of Starch Granules Injected into Rabbit's Vein and Tissue. M. Okazaki.—p. 1.

Fate of Starch Granules Injected into Rabbit's Vein and Tissue.—For the purpose of examining whether the starch granules introduced into the rabbit's vein are converted into the substance showing glycogen reaction, 5 c.c. of the prepared starch emulsion (a 0.5 c.c. of sweet potato starch suspended in 20 c.c. common salt solution) was injected daily into the ear vein of a rabbit. Okazaki found that the introduced starch granules were, in most part, retained in the pulmonary capillaries, and not conveyed into other organs by circulation, owing to the larger granules themselves. In two rabbits which were killed on the day of the third and fifth injection, the starch granules in the pulmonary capillaries did not present any chemical reaction for the glycogen substance. In other rabbits which were killed on the sixth day and some after seven days, the positive reactions were demonstrated; the longer rabbits lived the more obvious change noticed. In these cases, it was interesting to note that the majority of the converted granules were enclosed in newly formed giant cells which consisted of the proliferated capillary endothelium. The granules simply suspended in the blood stream presented a *less intense reaction*. In order to examine the change of the granules in the liver the same emulsion was injected directly into the vena mesenterica by performing laparotomy. The introduced granules were chiefly distributed in the periphery of the acini. As in the lung, the granules surrounded by the proliferical Kupffer's cells and the smaller granules were phagocyted by them. The intensity of the reaction was, also, more marked in such an enclosed granule. From the preceding facts Okazaki concludes that the endothelium of the lung capillary and the Kupffer's cell of the liver capillary show a diastatic action converting the starch into the glycogen reaction substance.

Bulletin de l'Académie de Médecine, Paris

Feb. 18, 1919, **81**, No. 7

Prophylaxis of Rabies. Committee Report. See Paris Letter, p. 1015.
*Dilatation of the Stomach from Lack of Resting Periods. G. Hayem. —p. 178.
Tuberculin Reactivation of Nodose Erythema. A. Chauffard and L. Girard.—p. 182.
Aeroplane Transportation of the Wounded. T. Tuffier.—p. 188.
Projectiles in Mediastinum. R. Le Fort.—p. 195.
Development of Brain in Anthropoid Apes. R. Anthony.—p. 197.

Dilatation of Stomach from Lack of Sufficient Resting Periods.—Hayem calls the type he describes *dilatation par trouble évolutif*, the evacuation being unduly prolonged and lapping over into the period of digestion of the next meal. Contrary to the German method of estimating the progress of the digestion by analysis of the stomach contents one hour after a test meal, Hayem estimates it by ascertaining the course of digestion, the *évolution digestive*. When the course of digestion is abnormal, it may take a very short time or a very long time to be completed. Some stomachs pass the food along at once, the stomach emptying itself in from ten minutes to an hour, but an abnormally protracted course of the digestion is a more common occurrence. The stomach does not empty itself completely between meals, so it never gets a chance to rest, and it is liable to become dilated from this overwork. There is usually with this *dilatation par trouble évolutif* a tendency to hypersecretion and hyperchlorhydria. Treatment with alkaline-saline waters generally corrects the condition provided the stomach is allowed a chance to rest. This can be realized by making the intervals between meals longer, and by reclining an hour before the meal, with a cushion under the seat, to give the stomach a chance to empty itself completely under the influence of gravity. The general rule is to lie down *after* eating, but to combat this form of dilatation the reclining is done *before* eating. Light massage of the stomach while reclining may prove useful in addition. He allows only two meals a day, at 10 a. m. and 7 p. m., or at 11 a. m. and 8 p. m. This gives an interval of nine hours between breakfast and dinner, and by this means the stomach is sure to be empty by mealtime. The patient may lose a little in weight at first, but gradually the whole condition improves; the stomach returns to its normal size and the former weight is soon regained and surpassed. If there is excessive or deficient secretion of gastric juice, the proper alkaline-saline mineral waters should be given as indicated, and if there is ptosis, a supporting belt may prove useful.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 27, 1918, **42**, No. 37

*Inherited Syphilis with Atrophy. H. Barbier.—p. 1225.
*Filariasis. A. Panayotatou.—p. 1230.
Thrombosis in Vena Cava. M. Pommay-Michaux and M. Boué.—p. 1234.
Diplococcus in Blood in Influenza. M. Pommay-Michaux, F. Moutier and J. Michaux.—p. 1235.
*Mirror Writing. C. Mirallié and Desès.—p. 1238.

*Latent Tuberculous Peritonitis. E. Joltrain and P. Baufle.—p. 1241.
Heart Disease and Fitness for Military Service. A. Clerc.—p. 1246.
No Benefit from Transfusion of Convalescent's Blood in a Case of Influenza. R. Morichau-Beauchant.—p. 1247.

The Wassermann Reaction in Atrophy from Inherited Syphilis.—Barbier relates that in ninety-three infants with marked atrophy a positive Wassermann reaction was obtained in 33 per cent. and others presented signs of syphilis so that fully 42 per cent. were unmistakably syphilitic, and a number of others probably had the inherited taint likewise. But tuberculosis and alcoholism must be incriminated in others. Atrophy of alimentary origin is spontaneously and rapidly curable when the diet is corrected, but atrophy from a congenital taint is quite another thing. It may develop with the best of breast feeding and treatment has to be tentative, and it takes great patience. When inherited syphilis is involved, specific treatment may transform the infant, but mercury should be given extremely cautiously and in minute doses. Some infants with atrophy improve wonderfully under mercury, while others show no gain or the symptoms may even become aggravated under it, the children being unable to bear the slightest therapeutic intoxication.

Filariasis.—In the first of Panayotatou's two cases the filariasis was located in one labium and in the other case in the glands in the inguinal region. Severe local pain and great tumefaction were explained by discovery of the filaria in the blood. No treatment has proved effectual: prophylaxis consists in avoiding being bitten by mosquitoes and drinking contaminated water.

Mirror Writing.—Summarized recently, page 527.

Latent Tuberculous Peritonitis.—Joltrain and Baufle have had charge of a special service for gastrointestinal disease, and they have encountered a number of cases of unmistakable intestinal disturbances for which none of the usual causes seemed to be responsible. The general impression was that of incipient tuberculosis, but the lung findings were practically negative and vague digestive disturbances called attention to the abdomen. Radioscopy revealed always an enlargement of the ileum with constricted segments below and possibly at other points. This stenosis comes and goes, but the parts involved are more or less immovable from adhesions, evidently relics of an old infectious process. These adhesions generally spread like a fan; this can be palpated, and the palpation findings were confirmed at necropsy in two cases. The whole trouble is insidious and readily misinterpreted. If latent tuberculous peritonitis were sought for as a routine measure the same as pleurisy, it probably would be found equally frequently. Possibly this may be the explanation of dysmenorrhea in certain cases or of the disturbances for which the appendix may be incriminated in young girls.

Journal de Médecine de Bordeaux

November, 1918, **89**, No. 11

Reconstruction of Upper Lip. W. Dubreuilh.—p. 311.
Tuberculosis and Exophthalmic Goiter. Creyx.—p. 314.
Iodin Internally in Treatment of Toxic Gases and of Influenza. L. Boudreau.—p. 317.

Journal d'Urologie, Paris

February, 1919, **7**, No. 4

*Wounds of Posterior Urethra. Marion.—p. 385; O. Pasteau.—p. 407.
Factitious Disease of Urinary Apparatus. Janet.—p. 415.
Pyelonephritis in the Wounded without Wound of the Kidney. R. Grégoire and F. Marsan.—p. 425.
Foreign Bodies in Urinary Passages. R. Uteau and R. Schwab.—p. 465.
*Illumination for Surgical Exploration of the Bladder. R. Uteau and R. Schwab.—p. 469.

Wounds of Posterior Urethra.—Marion reviews the management of the case after it reaches the hospital in the home territory. Pasteau discusses the measures to be applied from the very first to the last, both in the zone of activity, the zone of communications, and the home territory. These communications were presented at the fourth meeting of the chiefs of the *centres d'urologie*, and the discussions which followed are given also.

Illumination of the Bladder.—Uteau and Schwab expatiate on the advantages of using the cystoscope as an aid in throwing light into the depths of the well formed by the suprapubic incision of the bladder. The cystoscope introduced by the natural route illuminates the depths of the bladder most instructively, without encroaching on the field of operation.

Lyon Chirurgical

September-October, 1918, **15**, No. 5

*Diaphragmatic Hernia after War Wounds. L. Bérard and C. Dunet.—p. 509.
*Wounds of Brain. R. J. Weissenbach and M. Audibert.—p. 531; F. Albert.—p. 567.
*Thrombophlebitis of Cranial Sinuses. Bellin, Aloin and Vernet.—p. 626.
Aerial and Traumatic Shock. G. Lardennois and J. Baumel.—p. 637.
*Oculomotor Paralysis with Fracture of Petrous Bone. A. Mardellis.—p. 645.
*War Wounds of Maxillary Sinus. Vandenbossche.—p. 654.

Strangulated Diaphragmatic Hernia After War Wound of Chest.—In the case described with illustrations by Bérard and Dunet the sixth rib had been fractured. Some splinter of the bone had evidently irritated the diaphragm, and the constant movement of the latter increased the irritation with gradual laceration and, by the end of the fourth month, hernia through the breach thus formed, and the hernia became strangulated. There were no symptoms from the heart and lungs, no meteorism, and only pain around the umbilicus, arrest of passage of feces and gases, vomiting and almost absolute gastric intolerance. Some digestive poisoning was assumed at first, and even up to the fourth day on account of the absence of intestinal symptoms with the ileus. Before the strangulation, the only symptoms had been a painful tension, felt near the thorax, accompanied by gurgling sounds, most pronounced after meals and in the reclining position. Even fluids were vomited almost at once, but it is possible that during the briefly transient period before the stomach expelled the fluid, auscultation might have given the clue. The right-angled incision gave access to both thorax and abdomen. Three fourths of the stomach and 42 cm. of the transverse colon had slipped through the breach. No tendency to gangrene was found at necropsy, but there were numerous solid intrapleural adhesions between omentum and pleura.

Wounds of the Brain.—Weissenbach and Audibert warn that the presence of some foreign body is indicated when there are recurring aseptic puriform meningeal reactions. In a case described this recurring reaction occurred in the course of a suppurative ventricular ependymitis consecutive to a scrap of shell having penetrated the brain. The symptoms from the meningeal reaction subside but as the underlying cause persists, the reactions develop anew. The prognosis is thus grave unless the primal cause is sought and removed.

Albert advocates primary suture after wounds of the skull and brain and reports twenty-nine cases to illustrate the advantages of suturing the dura at once without draining. After the wound has been thoroughly cleared out, the danger of infection is always from without. Hence, by prompt suture of the dura and of the scalp, this danger is averted. Drainage should be reserved for the entirely exceptional cases, and tamponing of the wound should never be done. He describes in turn the different classes of wounds, and states that in his twenty-nine cases the immediate results were excellent in all but two cases in which the dura had been torn so much that the suture could not be realized. Even if it is known that there is an inaccessible splinter in the depths of the wound, he insists that primary suture is still the best procedure, ensuring healing by primary intention.

Thrombophlebitis of Cranial Sinuses.—Bellin and Aloin report a case of this kind originating in a carbuncle at the back of the neck in an Arab soldier. Tetaniform convulsions and facial paralysis were accompanied by the Gradenigo syndrome, paralysis of the fourth to the seventh nerves, and necropsy revealed abscesses and thrombosis through the whole venous system of the dura mater and brain.

Oculomotor Paralysis After Fracture of Petrous Bone.—Mardellis' patient was injured handling a log. The fracture of the apex of the petrous bone was followed by unilateral and isolated external oculomotor paralysis, paralytic convergent strabismus, with complete recovery in six months.

War Wounds of Maxillary Sinus.—Vandenbossche analyzes his experience with sixteen cases of this kind. They demonstrate the fine results that can be realized with collaboration of specialists in rhinolaryngology and plastic facial surgery.

Paris Médical

March 1, 1919, **9**, No. 9

Pulmonary Manifestations of Influenza. F. Rathery, Rault, David and Thomas.—p. 161.
Classification of Spontaneous Pneumothorax in the Tuberculous. C. Sabourin.—p. 170.
Artificial Pneumothorax in Treatment of Gangrene of Lung. P. E. Weil.—p. 180.
*Military Utilization of the Tuberculous. A. Gaussel.—p. 182.
Emphysema with Tuberculous Pneumothorax. C. Mantoux.—p. 185.
Pulmonary Tuberculosis after War Wound of Lung. A. Challamel.—p. 186.
Relapses in Influenza. Y. Maignial.—p. 190.

Tuberculous Soldiers.—Gaussel was appointed in 1914 to reexamine the men who had been discharged from military service on account of tuberculosis during the twenty-seven years preceding the war. Recently he reinvestigated the present status of those whom he had passed in 1914 as having recovered sufficiently to be capable of military duty in some form. Of the total 496, 172 were found unfit for service; 202 had apparently completely recovered and were passed for active service, and 122 had been passed for light duty only, the auxiliary service. Of a total of 310 accepted, 246 were still in the service at the close of the war, including 135 in active service. Classifying them by ages shows that the larger proportion of the permanently cured were among the men between 25 and 35.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Feb. 22, 1919, **49**, No. 8

*The Influenza Heart. H. Eichhorst.—p. 225.
*Laceration of the Tentorium in the Newly Born. H. Vischer.—p. 230.
*Absorption in Sugar Treatment of Tuberculosis. H. Bodmer.—p. 238.

March 1, 1919, **49**, No. 9

Unreliability of Serodiagnosis in Pregnancy. E. F. Bolli.—p. 257.
Treatment of Seborrhea of the Scalp. H. Merz.—p. 266.
Treatment of Chronic Alcoholism. E. Koechlin.—p. 277.

The Heart in Influenza.—Eichhorst states that he found anatomic evidence of injury of the heart from the influenza in only 0.3 per cent. of his 2,411 cases, but functional disturbances were extremely common and characteristic. They assumed the form of tachycardia or bradycardia, extra systoles or cardiac neuralgia but were never severe enough to endanger life. He describes examples of each type and calls attention in particular to the case of a physician who was suddenly surprised with intense tachycardia in the midst of apparent health. The heart beat was 200 with a pulse of only 148. Eichhorst advised him to go to bed or lie down, eat only fluid food, avoid tea and coffee, and he prescribed a sedative and heart tonic. The sixth night the tachycardia subsided during sleep; on waking the heart beat was only 84. The heart irregularity had been ascribed to abuse of coffee and tobacco but as the tachycardia subsided, symptoms of afebrile influenza became apparent and persisted for a week. Bradycardia was more frequent; cardiac neuralgia was encountered only in three cases. In all these influenza heart cases the patients were men; possibly, Eichhorst remarks, alcohol and tobacco may have contributed to the functional disturbance.

Intrameningeal Hemorrhages in the Newly Born.—Vischer analyzes what has been written on laceration of the tentorium during delivery, and reports the findings in this respect in 186 fetuses and newly born children. In 112 of the cadavers nothing visibly pathologic was found in brain or meninges. In 51 of the other 74 the tentorium had been torn, with considerable hemorrhage resulting in 27. In 24 there was no or only slight hemorrhage. In 23 there was hemorrhage but the tentorium was apparently intact. Laceration of the tentorium thus had occurred in 27.3 per cent. of the 186 cases. The birth process had been apparently normal in some and no regular connection with the mode of delivery could be detected. The cadaver of one adult male showed laceration of the tentorium after lateral contusion of the head as the man was looking out of a car window while passing a wall that stood close to the track. Vischer agrees with Beneke that laceration of the tentorium in itself should not be cited as the cause of death. The resulting hemorrhage is the danger. The intrameningeal and other hemorrhages are probably synchronous. He remarks in conclusion that the birth process injures the skull contents more than has hitherto been realized. This assumption is confirmed not only by the findings here analyzed but also by Paul's ophthalmoscopic findings in the newly born.

Absorption with Sugar Treatment of Tuberculosis.—Bodmer reports the results of research on the absorption processes after intramuscular injections of 50 per cent. sugar solution by the Lo Monaco technic. He has thus treated fourteen patients, making a total of 500 injections. He was surprised to find that all the injected saccharose was eliminated through the kidneys, and all in the course of forty-eight hours. The maximum of the elimination was reached in from four to seven hours. The sugar was eliminated without being inverted, and hence cannot have any causal therapeutic action, but the symptomatic effect of reduction of exudation and irritation was pronounced, with striking reduction in the amount of sputum. This action was most evident in the comparatively recent cases. He has never seen such a pronounced effect from any drug, and the only explanation can be the modification of the osmosis and, possibly, a vasomotor influence. Other sugars should be given a trial, and this treatment be extended to chronic bronchitis, etc.

Gazzetta degli Ospedali e delle Cliniche, Milan

Feb. 6, 1919, **40**, No. 11

Factitious Orchi-Epididymitis. R. Pianori.—p. 81.

Feb. 9, 1919, **40**, No. 12

*Staphylococcemia Simulating Typhoid with Relapses. U. Baccarani.—p. 89.

Staphylococcemia Suggesting Typhoid.—Baccarani insists that the staphylococcus does not always induce suppuration. It may produce a set of symptoms closely resembling those of typhoid, and it may return two or three times with intervening periods of latency, as if the disease was typhoid with one or more relapses. In one typical case a girl of 8 had apparently recovered from a small ulcerative lesion on the gum, but three weeks later came a chill and fever, the latter persisting for nearly two weeks and then it subsided completely. The child's aspect, lack of appetite and diarrhea led to the assumption of typhoid, until the fever subsided completely. After a few days of apyrexia, the temperature ran up again, with meteorism, diarrhea and an area of dulness. This attack lasted for a little more than two weeks, and again it subsided. After an interval of a few days the temperature ran up again for a third attack, and typhoid was then regarded as certain and the child was sent to the hospital, forty-two days after the initial chill. The tests for typhoid were negative, while staphylococci were cultivated from the blood. Each one of the attacks had produced the clinical picture of typhoid in every particular, he says, but the fourth and last attack—which occurred while in the hospital—was followed by an abortive osteomyelitic process in the tibia which retrogressed without suppuration, and the child left the hospital apparently cured, after a three months' stay. In the intervals between the pseudo-typhoid attacks, she felt well and ate with appetite. In a second case the onset and course were those typical of typhoid, and the woman was being treated for typhoid in the hospital when, three weeks after the first symptoms, the fever subsided by lysis and the other symptoms disappeared, the spleen returning to normal size. Four days of apyrexia followed; then the "typhoid" returned and the liver became much enlarged but without any special tender point. This second attack lasted for two weeks and then apparently complete recovery followed, by the end of the fourth month.

Baccarani has encountered a number of such cases but reports in detail only three, calling attention in particular to the extreme enlargement of the liver during the febrile attacks and its prompt subsidence to normal size during the afebrile intervals. The clinical picture of typhoid was complete even to the rose spots in some of the cases. De Rossi has recently reported that in four cases of supposed typhoid, confirmed by necropsy findings, no typhoid bacilli were found, but the *Staphylococcus pyogenes-albus* was cultivated from the spleen. Further testimony incriminating the staphylococcus comes from Pisa and Bologna, where Bonardi and Bruschettini noted epidemics of staphylococcus sepsis simulating typhoid fever. Staphylococcus sepsis, however, does not always induce this typhoidal state. There may be very high fever, but the patients feel well and eat with appetite. This lack of harmony between the fever and the general condition may serve as a clue to staphylococcus infection. Transient congestion in lungs and pleura is sometimes encountered during an attack, with the pneumococcus in the sputum. The patients complain at times of pains at the epiphyseal line of various bones, but there are no objective findings. In none of his cases was anything found to indicate suppuration at any point, although some spots of slight and transient redness, pain and swelling occurred at times in the skin, suggesting an impending furuncle, but always promptly retrogressing without leaving a trace.

Policlinico, Rome

Feb. 16, 1919, **26**, No. 7

*The Antecedents in Diagnosis of Nervous Maladies. G. Mingazzini.—p. 193.
Bacteriology of Influenza Sputum. P. Timpano.—p. 200.
*Quinin by the Vein in Malaria. A. Nicotra.—p. 202.
Motor Aphasia and Facial Paralysis after Injury of Child's Head: Recovery. T. Isidori.—p. 206.
Fracture from Muscular Strain. A. Ferri.—p. 207.

Feb. 23, 1919, **26**, No. 8

Etiology of Influenza. F. Micheli and G. Satta.—p. 225. Concluded in No. 9, p. 257.
Spread of Tuberculosis. T. Rossi-Doria.—p. 237.
Advantages of the Pécharmant Apparatus for Fractures. U. Daretti.—p. 240.

The Anamnesis.—Mingazzini expatiates on the importance of what he calls the catamnesis, that is, the eliciting from the patient the preceding history of the case. The way this is done shows the master physician. It is equally difficult when the patients are great talkers and when they are taciturn, but the main difficulty is a lack of attention to important details while the unimportant are exaggerated. He outlines a general scheme for interrogating the patient after letting him tell his story in his own way, if not too prolix. He adds that few are aware how many nervous symptoms labeled with the convenient diagnosis of neurasthenia are in reality the result of abuse of tobacco. The patient will seldom mention that he has been advised by other physicians to give up tobacco. One of the most common errors in diagnosis is when a new morbid process develops with the same symptoms as an older process, as for example when a person subject to migraine in youth develops cerebral pachymeningitis. The new symptoms seem to be merely the same old migraine. Persons with sexual neurasthenia can often be recognized by their pale and timid aspect alone. Nephritis and diabetes may at first manifest themselves by nervous symptoms alone, and only examination of the urine will give the clue to the cause of the pains and other nervous symptoms. Much time is wasted on inconsequent details in case reports read in the classes. The students pay no attention to the account of the eruptive diseases in childhood, date of menstruation, trauma, heredity, etc., and time is wasted in their enumeration. This does not fix in the minds of the hearers the fundamental points in the antecedents; these can and should be reduced to a minimal common multiple. "In short," he concludes, "may it be said of us what was said of a scientist over a century ago with some surprise: *Il était un savant et pourtant pas bête.*"

Quinin by the Vein.—Nicotra insists that quinin injected intramuscularly does not reach the blood in time to act on the malarial parasites at the most favorable moment or with the most effectual concentration. It reaches the blood only a little at a time. On the other hand, when injected into a vein it reaches and acts on the parasites at exactly the desired moment and in the maximum strength. He urges therefore to begin with intravenous injection of the maximal dose at the very first attack when the patient comes for treatment. In the majority of his hundred cases thus treated, one injection proved sufficient; rarely, two were necessary and, only quite exceptionally, three. There was one recurrence among the eleven cases of estivo-autumnal tertian and five recurrences among nine cases with irregularly long intervals. None of the others have had any attacks since the intravenous treatment. He declares that we can count on curing all primary cases by intravenous injection of 1 gm. of quinin during the febrile attack and also cases of recurrence with short intervals. When the injection is made while the fever is rising, he could not see any difference in the course of the attack from the similar attacks without quinin. The latter never aborts the attack in question. During the declining phase of the fever the young parasites have worked their way into the red corpuscles. With the estivo-autumnal form he injects a little more of the quinin, up to 1.25 gm.

Archivos Brasileiros de Medicina, Rio de Janeiro

November, 1918, **8**, No. 11

*Diagnosis of Incipient Leprosy. M. Mourão.—p. 677.
Deficiency Diseases. G. Riedel.—p. 693.
Juvenile Paretic Dementia. W. De Almeida.—p. 706.

Incipient Leprosy.—Mourão describes with illustrations what he calls a new sign of leprosy. It is the result of the wasting away of the muscles on the ulnar side of the hand so that the edge of the hand is thin, forming a sharp edge. The muscles controlling the little finger and the hypothenar region become atrophied and the palm smoothes out on that side. The muscles on the thumb side are not affected; the thenar eminence stands out more prominently from the contrast. The muscles of the inner aspect of the foot on the same side show similar atrophy, and there is loss of all sensibility, although the outer half of the foot and leg persist normal. He has observed these findings as the only manifestations of leprosy at first in some cases, the presumptive diagnosis confirmed later by the course of the disease. Among the other early signs he notes the extreme pallor in the nervous form of leprosy, while in the cases which develop the tubercular form later, the face becomes uniformly redder, not a bright red, but a little deeper red than normal. The veins are prominent, the skin looks smooth and shiny and is extremely sensitive, and any rubbing induces an actual erythematous redness. The loss of sensibility occurs in asymmetrical regions in a characteristic manner, affecting the ulnar side of the hand and the opposite side of the forearm up to the elbow; in the foot the inner aspect of the foot and the outer aspect of the leg—all on the same side of the body. A sensation of cold, even on warm days, is an early symptom of leprosy. Some lepers complain of hot flashes like those of the menopause, along with intense and continuous chilliness. He advises to be on the lookout for leprosy all the time, even when it seems preposterous to suspect it, and relates a number of cases in which treatment had been given for everything but the correct diagnosis. Mourão knows of a priest, a physician and a midwife, who have not allowed the fact that they have leprosy to interfere with the practice of their professions, and he has noted leprosy in barbers, servants and others. He mentions further a specific case of unacknowledged leprosy in a prostitute and one in a public school teacher, and refers to dozens of similar cases. One young man had been treated for progressive muscular atrophy and rheumatism for two years without benefit until his confession that his father had advanced leprosy cleared up the maze of symptoms. Mourão found that chaulmoogra oil arrested the disease as a rule, but this is a two-edged sword as it induces severe digestive disturbance. In conclusion he describes the Hospital dos Lazaros at Rio with its large gardens, music rooms, cinemas, orchestra, library and work rooms, as the solution of the national leprosy problem. This prevents contagion of others; it is a leper asylum from which no one wants to escape, a prison without bars, but its capacity is limited. Similar establishments scattered throughout the country would settle the question of prophylaxis.

Archivos Españoles de Pediatria, Madrid

December, 1918, 2, No. 14

Influenza in Children. C. S. de los Terreros.—p. 705. Conc'n.
*Environment in Neuroses in Children. C. Juarros.—p. 719.
Malformation of Urinary Apparatus. F. Iruegas.—p. 724.

The Environment in Neuroses in Children.—Juarros protests against the usual disregard of the conditions in the environment when a child presents a nervous tendency. A change to another environment will often cure a severe neurosis, or the removal of some one person from contact with the child will sometimes prove the key to the problem. In one of two cases reported a girl of 8 had been having three or four convulsions a week for a year, evidently of hysteric origin. Doctor after doctor was consulted and all diagnosed hysteria and ordered sedatives and general hygiene. When the child was brought to Juarros, he investigated conditions in the home and thus found that a cousin who lived in the family was subject to hysteria and convulsions. As this woman was a fixture in the family, the child had to be sent away from this mental contagion. She was placed with other relatives, and after the first month had no more convulsions during the following five months to date. In the other case the girl of 7 was unusually bright in school and her parents were "showing her off" constantly to friends, and taking her to shows, etc., so she did not get to bed till 12 or 1 and she had no rest during the day. Restless, agitated, light broken sleep, talking in her sleep, her condition resembled that of maniacal excitement in adults. The general health suffered, the appetite was lost, and she was growing thin when Juarros was consulted. He convinced the parents of the evils of their management of the child, and when this was corrected all disturbances speedily subsided. Every one admits theoretically that the seed for neuroses in adults is generally sown in childhood, but in the specific case this is too often forgotten.

Brazil Medico, Rio de Janeiro

Jan. 4, 1919, 33, No. 1

*Differentiation of Filaria in Blood and Feces. H. de B. Aragão.—p. 1.
*Syphilis and Obstetrics. F. Magalhães.—p. 2.

Differentiation of Filaria and Helminths.—Aragão calls attention to a modification of Thoma's solution which colors most of the parasites in stools and blood and preserves them, while dissolving out the red corpuscles. The formula is: gentian violet, 0.1 gm.; sodium chlorid, 0.35 gm.; distilled water, 100 gm., and acetic acid, 0.3 gm. About 0.5 c.c. of the blood is added to 5 c.c. of this solution. In examining for filaria, use 2 c.c. of the solution for 0.5 c.c. of feces. Both amebas and their cysts show up well by this means and keep perfectly for many days, the cysts for several months; also lamblias, blastocytes, bacteria and the ova and the larvae of helminths all show up well in this acetic solution of gentian violet.

Syphilis and Obstetrics.—Magalhães reviews the six principal ways in which syphilis influences pregnancy, from the prevention of conception to interference with delivery. Syphilis may be incriminated for certain cases of sudden deaths during delivery which otherwise seem inexplicable. The suprarenals have been so damaged by the syphilis that the woman's system is unable to bear the strain of parturition, or, if the cerebral vessels have been damaged as well, the toxic hypertension in this case produces a terminal hemorrhage in an eclamptic convulsion.

Prensa Medica Argentina, Buenos Aires

Jan. 10, 1919, 5, No. 22

*The Arrhythmias in Prophylaxis and Treatment of Heart Disease. G. N. Martinez.—p. 217.
Clamps etc. for Surgical Work. E. Finochietto.—p. 220. Cont'n.
Echinococcus Cyst Simulating Peritonitis. J. P. Garrahan.—p. 221.
*Hexamethylenamin in Typhoid. L. Ymaz and L. Ayerza.—p. 224. Conc'n.

Arrhythmia as Guide to Treatment of Heart Disease.—Martinez declares that his observation of cases of heart disease has convinced him that arrhythmia is always a sign of pathologic reduction of the functional capacity of the heart, the result of actual intracardiac lesions of some kind. He insists that the nervous system alone is unable to modify the rhythm if the heart is absolutely histologically and functionally sound. He has found that the cadaver always revealed more or less pathologic conditions in the heart in every case of arrhythmia that came to necropsy. He adds that sinusal arrhythmias and the simple so-called reflex extrasystole are a warning signal of heart disease that should never be disregarded. The Wassermann reaction has demonstrated the syphilitic factor in most of the arrhythmias in childhood as well as in adults; rheumatism and smallpox contribute another percentage, as also tuberculosis and derangement in the endocrine glands. The products of brain fatigue, such as accumulate in consequence of insomnia and other intoxications, make their deleterious influence felt on the heart. Prophylaxis requires hygiene and avoidance of irritation from the toxic action of unsuitable food and drinks and other causes, and complete moral and material repose for the nervous system. He advises to tranquillize the patient, repudiating all ideas of a grave condition, soothing the nervous system, investigating the glands with an internal secretion, and diverting the patient's attention from his heart. It behooves the physician to discover the incipient evil, and it behooves the patient to ignore it until hygiene, dietetics, drugs and suggestion from the physician have convinced him of the immense reserve power with which the heart is endowed. Then the mystery of his heart disease can be revealed to him.

Hexamethylenamin in Typhoid.—Ymaz and Ayerza here conclude their experimental study of the physiologic isotonicity of solutions of this drug and of its intravenous administration in typhoid and its elimination.

Jan. 20, 1919, 5, No. 23

*The Leukocytes in Immunization. A. Bachmann.—p. 225.
*Vertebral Sign of Syphilis. M. R. Castex.—p. 232.
*Albumin in Cerebrospinal Fluid. A. Prunell.—p. 232.

The Leukocytes in Immunization.—Reviewed April 5, p. 1041, when published elsewhere.

Sign of Tardy Inherited Syphilis.—Castex emphasizes the diagnostic importance of bifurcation of the spinous process of the first lumbar vertebra as a frequent sign of inherited syphilis. One or more vertebrae may be involved; in one case the bifurcation was in the twelfth dorsal vertebra. He remarks that there are no anatomic or embryologic reasons for this bifurcation, and it must be regarded as pathologic. To date he has found it only with inherited syphilis.

Quantitative Test for Albumin in Cerebrospinal Fluid.—Prunell prepared a set of seven test tubes containing from 0.7 to 7 parts cerebrospinal fluid known to have an albumin content of 1.40 gm. per liter. Enough physiologic serum is added to each tube to make ten parts, namely from 9.3 to 3 parts. Each test tube contains 2 c.c. of the mixture, and to this are added 10 drops of a 25 per cent. solution of trichloracetic acid; the tube is fused, heated to 100 C. and then to 110 C. for ten minutes. The tubes are then placed in a frame against a black background. The fluid to be examined is treated in the same way and then it is placed beside one of the standard tubes while a printed card is slipped behind both. The tube which allows the letters on the card to be read with the same facility through both tubes serves as the index for the albumin content. Ten different fluids were tested by this diaphanometric method and also by the gravimetric, the gasometric and chronometric procedures, and the comparative findings were found approximately the same. Two illustrations accompany the article.

Semana Medica, Buenos Aires

Jan. 9, 1919, 26, No. 2

Anatomy of Pterygoid Process. J. J. Cirio.—p. 27.
*Indirect Operative Treatment of Gastric Ulcer. C. Alvarez (Oviedo, Spain).—p. 30.

Indirect Operative Treatment of Gastric Ulcer.—Alvarez operated on account of an ulcerated lipoma straddling the upper spine. The woman of 40 had had stomach symptoms and hemorrhages typical of gastric ulcer for thirty-eight months. Two days after excision of the tumor in the back the stomach symptoms subsided completely and permanently with no return during the eight years later until the woman died of phthisis. This remarkable indirect cure of the gastric ulcer confirmed the nervous origin of the latter, and suggested that a similar lesion artificially induced might cure gastric ulcer in other cases. Since then Alvarez has attacked this same group of nerves as in the first case, namely, the sixth, seventh, eighth and ninth pairs, reaching them through a bilateral incision about 8 cm. long, cutting down to the bone, from the sixth to the tenth rib, three fingerbreadths from the median line. The lips of the wound are kept apart by retractors held by an assistant. Then each intercostal space is incised perpendicularly to the ribs, cutting through the muscle. The edges of this muscle are drawn apart and with the bistoury the deep fascia is cut parallel to the rib. Through this 5 mm. opening, the intercostal nerve is drawn up with a hook and seized with Kocher forceps, with care not to rupture any vessels accompanying the nerve, or to induce pneumothorax. The nerve is then severed and the central stump is well stretched, concluding with torsion. Experiments on the cadaver have shown that the effect on the nerve is stronger from the stretching than from the torsion. He gives the details of a number of cases of different types of disturbances, ulcer, hyperchlorhydria, hypersecretion and spasmodic stenosis, even ectasia of the stomach, all showing prompt and permanent benefit from this indirect treatment of gastric ulcer by *conmoción a distancia del gran simpático,* as he calls it. It has little if any effect on disturbances from organic stenosis; these cases call for a gastro-enterostomy. The benefit from this indirect operation confirms the assumption that nervous influences induce the disturbance in the stomach; they shut off the blood supply at some point which permits autodigestion at this point, and also prevents normal repair. By severing the nerve connection, the circulation returns to normal as the stretching of the nerve tears the rami communicantes and breaks up their nerve connection with the stomach. Notwithstanding the persistence of the hyperchlorhydria, the ulcer does not return, and in time the stomach outline approaches normal once more. The operation amounts to a physiologic pylorectomy as it removes the causes maintaining spastic closure of the pylorus.

Siglo Medico, Madrid

Jan. 18, 1919, **66**, No. 3397

*Valvular Disease. Huertas.—p. 41.
Carrel Treatment of Infected Wounds. G. Rottenstein.—p. 45. Conc'n.

Valvular Disease.—Huertas gives a number of examples to illustrate the vicious circle in heart disease, and the various phases through which it passes: the physical, the chemical, the dynamic and the terminal, with either mitral or aortic insufficiency or stenosis.

Jan. 25, 1919, **66**, No. 3398

Autointoxication. J. M. Rosell.—p. 61. Cont'n.
*Puerperal Pathology. P. Luengo.—p. 65.
Advantages and Disadvantages of Yellow Oxid of Mercury in Salve Form. Sicilia.—p. 67.
Smallpox at Barcelona. F. P. Freixa.—p. 69.

Puerperal Embolism.—Luengo reports the case of a woman of 40 taken suddenly with intense dyspnea, high fever and acute pain in the back and side of the right side of the chest, but there was no cough, no expectoration and none of the physical findings of pneumonia. She had given birth to her third child three weeks before. The puerperium had been normal, the woman getting up in five days, but inquiry elicited that she had been feeling a dull pain in the region of the left adnexa. The assumption of pulmonary embolism from a puerperal thrombophlebitis was confirmed by the persistence of the pulmonary symptoms for eleven days, when the fever subsided and a persisting cough developed with blackish bloody expectoration. After a week, phlegmasia alba developed in the femoral vein region and, eight weeks later, in the leg on the other side. These gradually subsided but by the end of the sixth week there was a new attack of embolism in the lung which ran a similar course. To ward off further embolism, the woman lay still in bed for three months and recovery then seemed complete. Treatment had been with revulsions, sedatives, quinin and serotherapy, ichthyol in the vagina and antistreptococcus serum. The general condition kept good throughout, the blood findings within normal range. The embolus causing the lung trouble must have been aseptic or very slightly septic.

Nederlandsch Tijdschrift v. Geneesk., Amsterdam

Jan. 18, 1919, **1**, No. 3

Radiobiology. H. Zwaardemaker.—p. 239.
*Bullet Wound of Heart. R. de J. de Jong.—p. 253.
Influenza in the Pregnant. J. A. Van Dongen. — p. 257.
Paralysis with Infectious Sore Throat. J. E. Schulte.—p. 264.

Bullet Wound of Heart Without Opening Pericardium.—In de Jong's case necropsy revealed that a prompt operation might have saved the young woman. The bullet had bored into the outer layer of the pericardium but the inner layer had stretched without rupturing. The impact was such that the distended ventricle was ruptured by the bullet, still driving the inner layer of the pericardium before it. There was thus a hole into the ventricle although the inner aspect of the pericardium was smooth and free from lesions throughout. He has found sixteen similar cases on record of gunshot wounds of the heart, without perforation of the pericardium, some with recovery.

Hospitalstidende, Copenhagen

Jan. 1, 1919, **62**, No. 1

*Diagnosis and Treatment of Kidney Stones. T. Rovsing.—p. 1.
Influenza in 1918. O. Thomsen.—p. 24.

Kidney Stones.—Rovsing here epitomizes his twenty-five years' experience in the diagnosis and treatment of kidney stones, a total of 533 cases, including 185 with blood borne infection and 221 in which the operation revealed aseptic conditions, with 127 aseptic cases in which no operation was attempted. In the majority of the surgical cases the kidney stone caused no symptoms until suddenly pains with hematuria or pyuria attracted attention; this may occur at any time in life from early childhood to advanced age. When a stone of this kind has been removed, the kidney shows no tendency to form other concretions. A transient fever, or a course of one-sided diet, may be the occasion for production of urates in such amounts as to entail a kidney stone. As an example of this he mentions the Swedish surgeon Lennander who developed a kidney stone apparently as the consequence of a course of "dry diet" taken at Nauheim on account of heart disease. On the other hand, it is extremely rare for the congenital uric acid diathesis to entail kidney stones calling for surgical intervention. The gravel and small stones are passed without need for an operation. Pains and hematuria in these cases are generally traceable to uratic nephritis or perinephritis for which nephrolysis seems to be the best treatment. One man has ten or twelve attacks each year of left ureter colic and passes gravel and stones no bigger than a pea, but radiography has never shown any considerable stone in the kidney. The right kidney persists normal.

Phosphaturia is frequently accompanied by large concretions; in four cases in which the tuberculous kidney had been removed, anuria developed later and he found the pelvis filled with large and small phosphate stones, one of which had become impacted in the ureter. The majority of cases of phosphate stones in the kidney are due to accidental or artificial phosphaturia. Frequently this is the result of a therapeutic course of alkaline mineral waters, possibly given to combat nephrolithiasis, regardless of the law that when a foreign body is laved in a solution of a salt, the foreign body becomes incrusted with the salt, even when the urine is limpid and sterile. Instead of dissolving the concretion, alkaline mineral waters add to its size by deposits of salts. Long treatment of rachitis with calcium salts may also lead to stone production in the kidneys.

Rovsing has encountered only two cases of cystin stones and both patients were permanently cured by removal of the stones and restriction afterward to distilled water. One was a woman of 32, the other a girl of 4. Both had had symptoms of cystinuria since early childhood, the woman's attacks of pain returning finally as often as every two weeks, always on the left side, and not spreading. During the five years since the nephrotomy the urine has kept free from cystin.

In some cases the disturbances from the supposed kidney stone proved to be due to the binding of the kidney in the fibrous degenerated true capsule; slitting this capsule and releasing the kidney cured the disturbances. In other cases a partial hydronephrosis from some aberrant vessel was the cause of the pains and hematuria, or a movable kidney, or appendicitis simulated kidney stones. Appendicitis can be differentiated by the pain induced in the cecum by pressure on the descending colon. Again and again, he states, patients sent to the hospital with the diagnosis of appendicitis failed to respond positively to pressure on the descending colon, exculpating the appendix, although there was pain at McBurney's point and the urine was limpid and nearly or entirely free from albumin; a stone impacted in the ureter was responsible for the symptoms. In such cases the apparently normal urine may show microscopic hematuria. On the other hand, pressure on the descending colon may point to the appendix when the colic and hematuria prove to be merely the results of complicating colon bacillus nephritis. The dire effects of an utterly unnecessary nephrotomy in such a case are obvious.

With radiography it is important to inspect both kidneys and both ureters and the bladder as well. The stone may be found in the apparently sound kidney. One man of 40 had symptoms of stones but radioscopy was negative, and yet a catheter in the ureter met with an obstacle which the operation proved to be a stone, and palpation of the kidney showed a cancer in the upper part of the kidney. The ureter was ligated below the stone and the whole mass with the kidney was excised with complete recovery of the patient. One patient seemed to have an actual urate stone factory in his left kidney, the repeated attacks of colic occurring through many years, with the passage of numerous stones up to the size of a pea, but radiography was always negative. The findings were also constantly negative in a man who had a large number of calcium carbonate stones in his right kidney. The negative findings here must have been due to changes in the tissues around. Triple phosphate and urate stones cast faint shadows; in the obese possibly none at all. In thirty-two of 195 cases in which a stone was found at the operation, the roentgen findings had been negative. In six other cases the findings had been absolutely misleading. In four other cases colics from other causes coincided with calcified glands and the latter were mistaken for kidney stones.

In treatment of nephrolithiasis, he advises copious drinking of distilled water, as this washes out the kidneys without depositing more minerals. The patients can take up to 2 or 3 liters in this way, but it must be taken between meals and in small amounts, at most a quarter of a tumblerful at a time. He advises them to get the distilled water from a mineral water establishment instead of from the pharmacy where the water absorbs the odors from iodoform, phenol, etc., which gives the patients a distaste for it. We cannot hope to act on the stones except when they consist of urates and oxalates and are not larger than a pea, but with these, the course of distilled water often realizes a complete success. It is also extremely useful as a preparation for operative treatment in the infected cases and to follow the operation. He waits before operating, unless his hand is forced, to allow this distilled water course to rid the kidney of a certain amount of its toxins and bacteria. This may transform an absolutely inoperable bilateral case into an operable case, and even in the inoperable cases may keep the patients in good condition for years. One woman has kept in good condition during twenty-five years with her 2 liters of distilled water daily, although she still has coliuria and a large stone in the kidney as at first. The distilled water course after the operation is particularly important with the uric acid and oxalic acid diatheses, and it cured the two patients with cystinuria mentioned above—the first time on record in which cystinuria has been influenced by therapeutics. In conclusion Rovsing discusses the various operative methods applied and emphasizes the difference in the outlook according to the bacteriologic findings.

Ugeskrift for Læger, Copenhagen

Jan. 23, 1919, 81, No. 4

*Treatment of Cancer. S. Nordentoft.—p. 129.

Jan. 30, 1919, 81, No. 5

*Lessons from War Restrictions in Food, M. Hindhede.—p. 183.

Treatment of Cancer.—Nordentoft regards as great progress the result of recent research by Kaminer and others showing that malignant growths can be influenced by serum and organ extract treatment; also that the diet has an influence on the growth of cancer. Thymus extract in particular seems to destroy cancer cells in vitro, even when diluted twenty-two times, or destroys 55 per cent. and 32 per cent. diluted twenty-three and twenty-four times. This suggests the possibility of destroying cancer in the living body by injection of thymus extract, which may also aid in elucidating the etiology. He adds that the best results to date with thymus extract have been obtained with fresh, unheated thymus extract. His own experience with it is still too recent for a final decision, but the patients bore daily injections of 10 c.c. without signs of intolerance, no general or local reaction or anaphylaxis. Denmark has no general institution for cancer research, and he urges others to follow this promising line of study, investigating the physiology of the thymus at different ages, the behavior of the thymus in persons with cancer, the effect of thymus extract on incipient cancers, and the species of animals that yield the most effective thymus extract; dog thymus to date has shown greater cancer destroying power than rabbit thymus. The thymus extract should be standardized and the essential principle isolated if possible. It will be interesting to see how injections of thymus extract affect the inoculability of mouse and rat cancers, and whether preliminary injections of thymus extract will ward off the development of Fibiger's nematode cancers in rats, and the Japanese cancers in rabbits, and, finally, whether they may not prove effectual in warding off recurrences in man after operations or radiotherapy.

The Wartime Food Supply.—Hindhede compares the food conditions in Germany and in Denmark during the war, saying that the war experiences have proved a test on an infinitely huge scale of the Voit-Rubner views of an adequate dietary as opposed to the Chittenden-Hindhede views. The food supplies in Germany should have been mobilized and managed on a true scientific basis, as efficiently as the military affairs. Instead of that, the farmers let their brothers in the cities starve while they fed their pigs. Ballod in Germany in 1917 confirmed Hindhede's assertion in 1915 that the German pig was perhaps the most dangerous of the forces with which Germany had to contend. In Denmark, on the other hand, the food commission consisted of four scientists (including Hindhede), and four representatives of the farming interests. All agreed that to feed grain and potatoes to cattle and swine meant a loss of at least 80 per cent. of the nutritional value. The logical consequence was the requisitioning of all the bread grain, of most of the barley, and of a large proportion of the potatoes, for food for the people. The stock of pigs had to be reduced to one third or even, in some places, to one tenth, but this did not frighten the commission. They insisted on reserving enough food for human beings and a 30 per cent. excess. The farmer members of the commission—taught by the evil experiences in Germany—accepted this plan, and their unanimous approval brought the whole country, town and farming districts alike, to approve and accept. The stock of cattle has dropped from 100 to 65 per cent. and of pigs from 100 to 17 per cent. The farmers ceased to lament the loss of their stock when they saw the dire effects in Germany of the opposite policy. The city people regretted the scarcity of meat, but they rejoice now that there has been no starvation and that the public health in general is in the best of conditions (apart from the influenza). Hindhede remarks in conclusion, "The German soldiers conquered France in 1871 with the aid—or in spite of—three fourths of a pound of meat a day, and they went into the present war on the same basis. Germany has paid a high penalty for clinging to the antiquated Voit-Rubner ideas of an adequate dietary."

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TROPICAL DISEASES OBSERVED IN SIAM

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As the Central Hospital of the city of Bangkok came under the administration of the local sanitary department, it afforded an excellent opportunity to observe and study various tropical diseases as they appeared in the outpatient department of the hospital. In the different textbooks on this branch of medicine, seldom if ever does one see a reference to Siam; and it is thought that a short paper on the more important diseases observed may be of interest.

SKIN DISEASES, INCLUDING ULCERS

Of the pyogenic infections little need be said. They are very common as in other tropical countries, with special reference to pyosis mansoni and purulent folliculitis of the various parts of the body.

The great majority of the skin diseases found come under the simple dermatomycoses, and of these the most common one observed was tinea flava. A few cases of tinea imbricata appeared. Several cases of sporotrichosis have been treated with mixed iodids resulting in the complete disappearance of all lesions. Only one case of mycetoma has been seen, which was in a native Siamese—a case of long standing, affecting the foot. The sclerotia were yellowish white and of different sizes. Local treatment and general medication produced no results, and amputation was advised; but the patient refused, and the case was lost sight of.

Several cases of juxta-articular nodules have been seen, in two of which the nodules were located in the gluteal region. The patients were all Siamese, and I have seen no cases in Chinese. It is possible that the habit of sitting on the haunches is a predisposing cause to the gluteal regions being affected.

With regard to ulcerations, I have lately finished the examination of 100 ulcers as they appeared in the clinic for treatment. A digest of my paper on this subject appearing in the government Red Cross medical journal may be of interest. Eggers[1] reported on the examination of 2,874 specimens and found that 9.3 per cent. were positive for spirochetes of one or more types. I followed his method of staining so that the results might be compared. Eggers' Type A spirochete is thus described:

> A long, tenuous organism, which typically possesses from three to four complete, regular convolutions of considerable amplitude. It is on an average 13 microns long, but varies considerably from this figure in both directions. As a rule it takes a bluish stain with Giemsa's solution (stained twelve hours).

This organism he considers the typical organism of tropical ulcer. My results are given in the accompanying table.

Thus of 100 ulcers, 10 per cent. showed spirochetes all of Type A (Eggers). From these results I am inclined to look on this organism, which corresponds to *Spiroschaudinnia schaudinni* Prowazek 1907, as a superimposed infection on an ulceration. Certainly this spirochete was not limited to a disease of distinct clinical features; in fact, it was to be found in a variety of diseases with great variations in clinical features. It is of interest to note that in two of the ulcers typical Leishman-Donovan bodies were found; consequently, a diagnosis of oriental sore was made.

Of the dermatozoiases I have had a case of dermatitis macrogyrata in an ambidextrous Chinese carpenter. The patient was advised to stop all work and to keep the hands covered with ointment of phenol and well bandaged. A marked improvement has attended this treatment.

CLINICAL DIAGNOSIS AND LABORATORY FINDINGS

Diagnosis	Spirochetes	Type (Eggers)
1. Tropical ulcer	Positive	A
2. Tubercular ulcer	Positive	A
3. Varicose ulcer	Positive	A
4. Ulcus infantum	Positive	A
5. Undetermined ulcer	Positive	A and Leishman-Donovan bodies
6. Syphilitic ulcer	Positive	A
7. Tropical ulcer	Positive	A
8. Tropical ulcer	Positive	A
9. Tropical ulcer	Positive	A
10. Undetermined ulcer	Positive	A and Leishman-Donovan bodies

Two typical cases of keratoma plantare sulcatum have been seen. They both gave a history of almost complete recovery during the dry season, but during the rains and especially the last flood season, the disease appeared in all its severity. The deep creases and the typical punched-out holes were quite evident on the soles of the feet. Keeping the feet dry and covered with ointment of phenol had a good effect.

Leukoderma and albinism are extremely common, as well as chloasma of the various types.

Of the tumors, rodent ulcer has been seen in a native. Keloids and fibroma molluscum are common. Ichthyosis is very common.

PLAGUE

Plague is endemic, and hundreds of persons succumb to it every year; but fortunately the government is now awake to the danger, a royal plague commission having but recently been appointed to consider ways and means to control it. I have seen no cases of pneumonic plague in human beings; but having had occasion to examine a number of cats that had died suddenly in and near a large government institution, I found they had died from pneumonic plague.

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[1] Eggers: J. Infect. Dis. **16**: 269 (March) 1915.

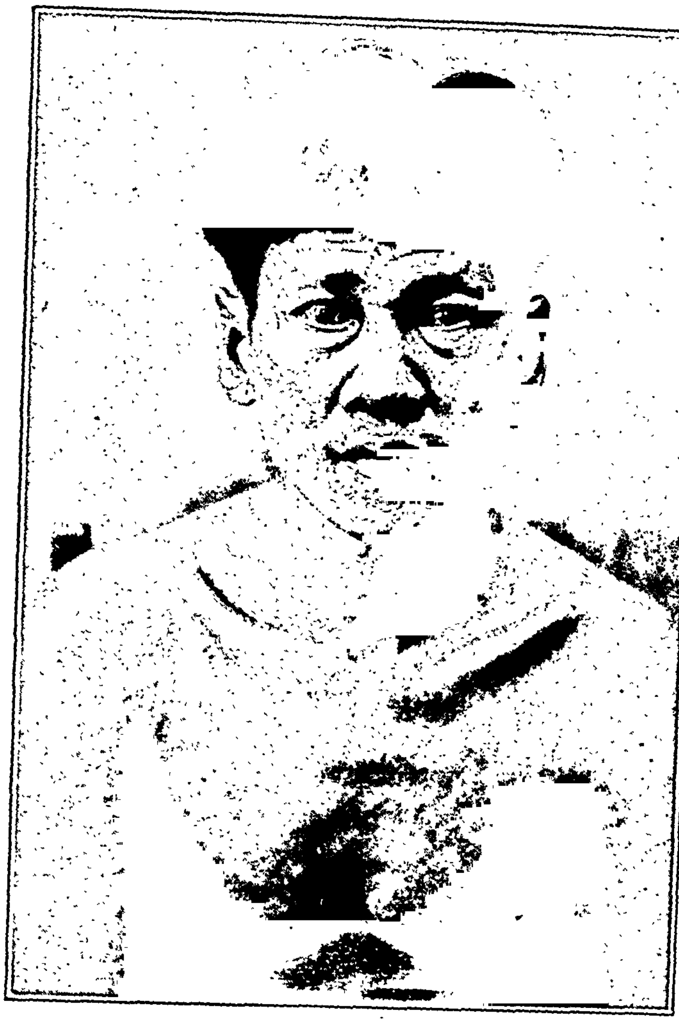

Fig. 1 (Case 3).—Leprosy: appearance of patient in April, 1917.

The ambulatory type of bubonic plague is common, and in this connection I wish to mention two cases that are of interest.

Case 1.—A boy, aged 18 years, who came to the outpatient department complaining of an injury to the palm of the right hand, had fallen two days previously, and a splinter of wood had entered the palmar surface of his hand. There was a rise in temperature of 1 degree, and a very slight amount of swelling of the hand. The glands were not enlarged. The patient complained only of "stiffness in the hand." He did not look ill, and plague was certainly not thought of. The hand was treated surgically, and for some unaccountable reason the patient remained in the hospital for treatment, as usually these minor injury cases are sent home with instructions to return for treatment. In twenty-four hours this boy died, and a postmortem examination revealed a septicemic plague.

Case 2.—A man who came to the outpatient department on account of an injury to his right foot was suffering from an open wound of several days' standing with a dirty discharge. The patient felt well, had a temperature 2 degrees above normal and there was a slight bubo in the groin. This was examined for bipolar-staining bacilli, and as these were found, a diagnosis of plague was made and the patient sent to the plague hospital, where he recovered.

The suppression of plague in Siam presents many difficulties, of which the religion of the country constitutes the first and foremost. The Buddhist religion forbids the taking of life. I do not attempt an explanation of the taking of human life during war; suffice it to say that it is impossible at the present time to get a Buddhist to kill a rat. Also one has to fight "vested interests." The erection of rat-proof buildings, and sanitary measures as a whole encounter great opposition, and sad to say, the Europeans are as bad as the natives when it comes to blocking improvements. Again, the little item of available funds is rather perplexing; as a matter of fact, not only must one overcome the foregoing difficulties, but one should possess a large stock of faith, hope and charity; then the plague problem might not look so big.

KALA-AZAR

I have seen only one case of kala-azar. Jan. 31, 1918, a native-born Siamese who had never been out of the country appeared in the outpatient department for treatment, complaining of "weakness and swelling." He was advised to remain in the hospital under observation, which he did. After several examinations, the parasite *Leishmania donovani* was demonstrated. The patient died after being in the hospital one week, and a postmortem examination disclosed a large, red spleen in which parasites were easily demonstrated. Although this is the only case I have seen, and have heard of only one other case, yet dermal leishmaniasis is not uncommon. At least 2 per cent. of all ulcerations coming under my observation showed *Leishmania tropica.*

FILARIAL DISEASE

Filarial disease is not uncommon, as is evidenced by the unsightly deformities appearing for treatment. It is an easy matter, comparatively speaking, to demonstrate the microfilarias, because the native Siamese has a habit of sleeping in the day and doing what little work he does at night, which is not such a bad idea, considering the extreme heat of the day.

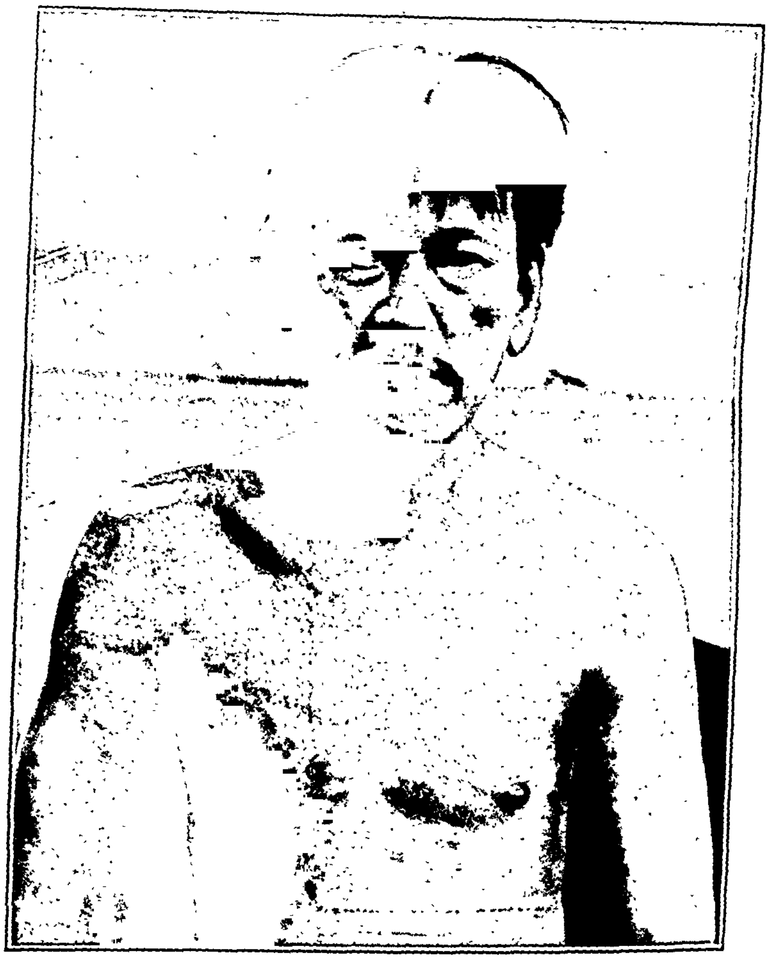

Fig. 2 (Case 3).—Leprosy: appearance of patient one year later, April, 1918.

We have had elephantiasis of the lower extremities and the scrotum, filarial abscesses, hydrocele and other complications. I have had several cases of what is known locally as "Bangkok fever," the blood examination revealing a filarial infection, with or without a malarial infection. I recently saw a man, one of the better class Siamese, who complained of a rupture. His swollen leg of long standing caused him no anxiety; being not greatly enlarged, it did not interfere with locomotion, but the swelling in his groin worried him. On examination a distinct swelling, soft and producing an impulse on coughing, was made out. But it would not completely disappear when the patient reclined, and also a blood examination showed microfilariae. Puncture revealed lymph; microfilariae could not be demonstrated.

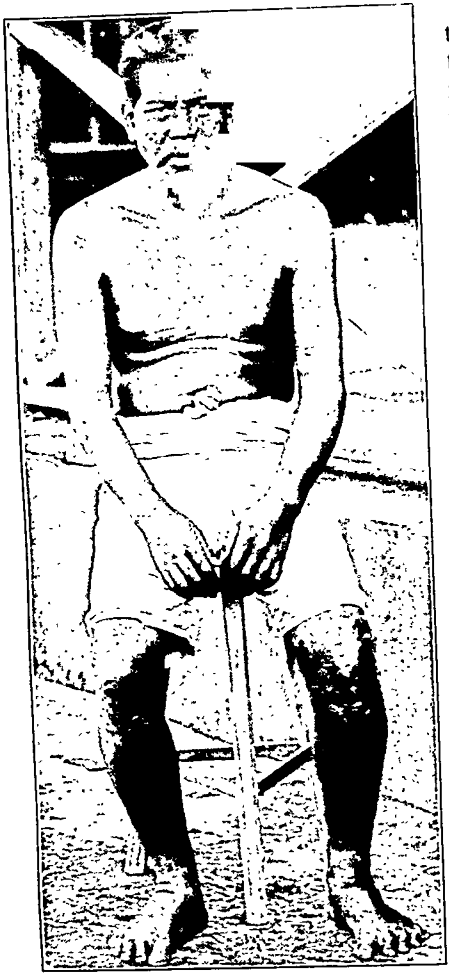

Fig. 3 (Case 4).—Leprosy; front view of patient in October, 1917.

LEPROSY

It is estimated that there are in Siam no less than 5,000 lepers. At present no effort is being made by the government to segregate or to treat these people. The various missionary doctors are doing good work, but unfortunately only a small percentage come under their observation. It is hoped that the government will in the not distant future find it possible to build a leprosarium.

Every type is represented, and, as far as I could see, the cases were about equally distributed among the various races that one finds. Rogers' new treatment is being tried out by several men, and good results are reported; but it is too soon to make comments on final results.

It is peculiar that while some observers report most promising and even lasting results with Rogers' treatment, others report exactly the opposite. It would seem advisable, when a new treatment is brought forth for a disease such as leprosy, to appoint an international commission to report on it, and if it is found of value, to insist, so far as that is possible, that those afflicted be given the benefit of such treatment. Too often the medical profession either jumps at conclusions (this may sound rash, but it is a fact) or is influenced by conditions quite foreign to the subject under consideration.

CASES OF LEPROSY TREATED WITH SODIUM GYNOCARDATE AND SODIUM GYNOCARDATE "A"

These cases are reported through the courtesy of Dr. M. Carthew, Assistant M. O. H., Bangkok, Siam.

Case 3.—The patient had had leprosy two years, when first seen in April, 1917, and had been in prison for three years, so that it appeared that he had been infected in prison. His body and face were covered with red maculae of varying sizes; some had pale centers. There was an extensive dermatitis of legs and feet and arms. The hair had fallen out of both eyebrows, and the eyelashes were very scanty. There was ptosis of the left eyelid and absolute anesthesia of arms, hands, legs and feet. The bacteriologic examination of the nose was positive. The diagnosis was: maculo-anesthetic leprosy.

In April, 1918, the small scattered maculae had all disappeared with the exception of one or two remaining faint red marks on the back and the abdomen. The dermatitis was much improved except over one shin bone where it was in the same condition as a year before. The eyelashes were now normal. The eyebrows had grown, and the mustache and the beard were now growing freely. The anesthesia of legs and feet was improved, but the condition was not yet normal. The patient could feel pinching but not stroking merely. The feet remained partially anesthetic. The anesthesia of the hands and the arms had completely disappeared with the exception of one small spot on the left outer arm below the elbow where a fresh reactionary swelling seemed to be just breaking out. His general health was now normal, and he never suffered from acute joint pains. The result was considerable improvement.

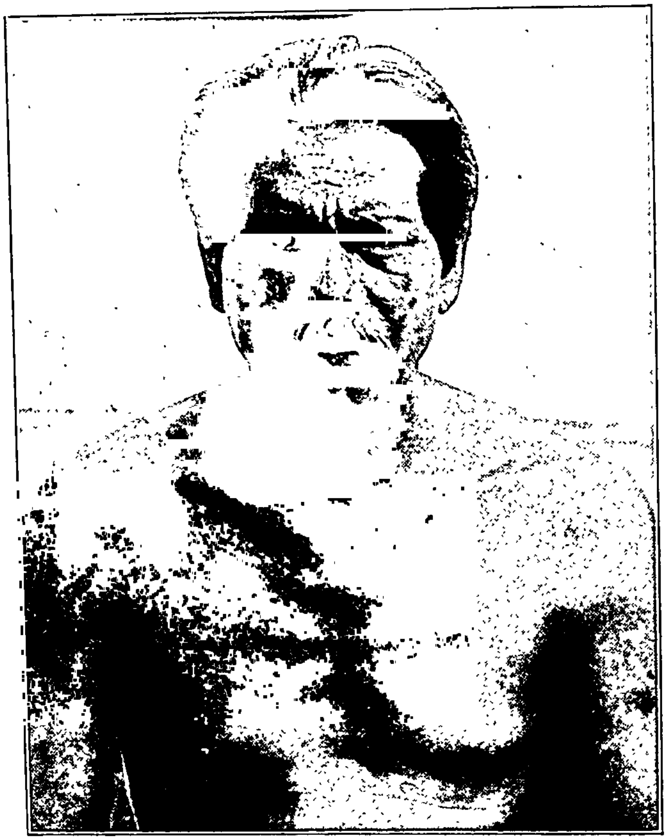

Fig. 4 (Case 4).—Leprosy: front view of patient in April, 1918.

Case 4.—The patient had had leprosy fifteen years, when first seen in October, 1917, and had been in prison seven years, during which time he had not been isolated till eight months previously. The patient's whole body and face were covered with disseminated tubercles. There were dark red maculae (almost black) on the face, chest, back and right lower leg. These had distinctly raised margins. There was a dark, large, red macule on the back with raised edges showing extensive scaly dermatitis. There was complete anesthesia of all above-mentioned maculae, also of the outer side of the right foot, of the inner side of the left foot, and of the right wrist. The diagnosis was mixed leprosy.

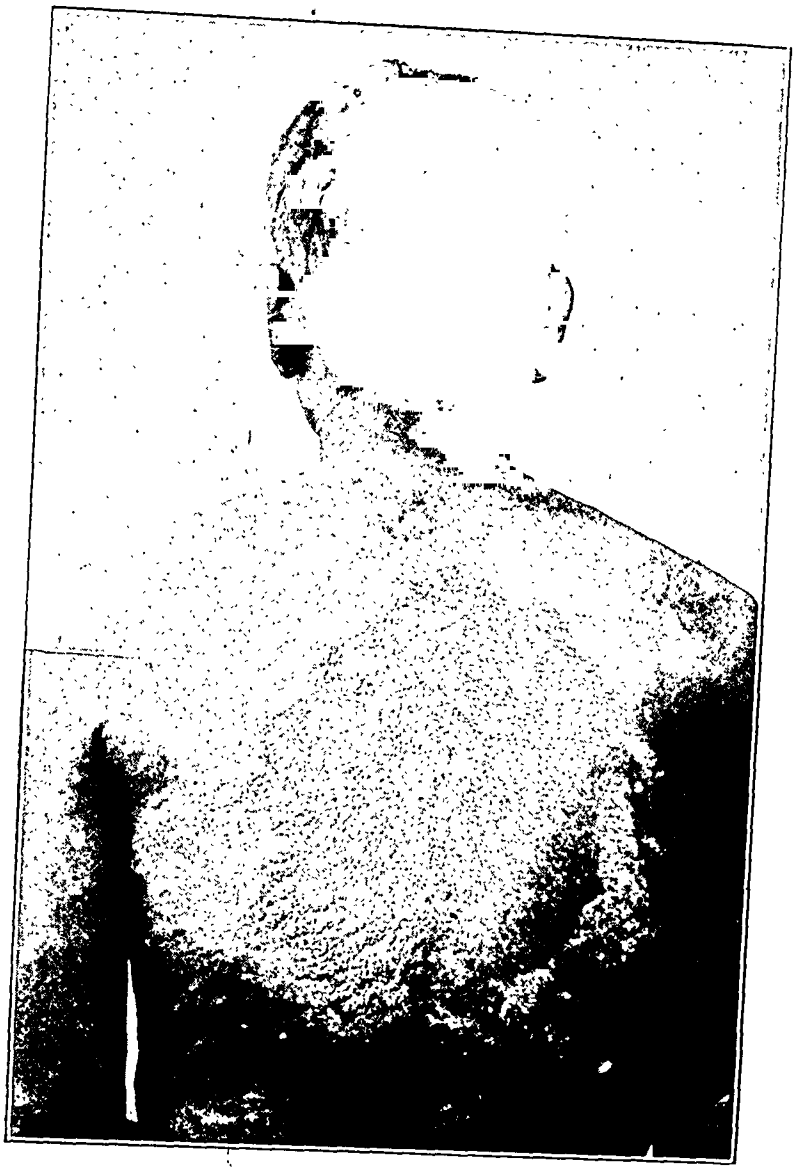
Fig. 5 (Case 4).—Leprosy: dorsal view of patient in October, 1917.

In April, 1918, namely, after seven months' treatment, all tubercles and the dermatitis had completely disappeared, but some of the macular thickening remained. The maculae on the face were much reduced in size and were of almost normal color with two exceptions. As regards anesthesia, sensation had returned in all maculae with the exception of a 2-inch patch on the back and a similar patch on the outside of the right foot. The patient's general health had much improved. The results were that the lesions were markedly improved.

MELANOTIC SARCOMA OF CHOROID

Case 5.—A Siamese man, aged 32, presented himself at the clinic with a melanotic sarcoma of the choroid of five months' duration. There was metastasis to the parotid gland. There were no signs nor symptoms of any other disease. An operation was performed and the patient made an uneventful recovery.

FRAMBESIA

Frambesia is very common in Siam. Most of the cases seen in the clinic have been in children and in young adults. Unfortunately the patients do not come for treatment until the disease is far advanced. The clinic is not in a position to treat the patients with arsphenamin, but very good results have been had with liquor potasii arsenitis (Fowler's solution). I have my doubts as to the permanent results from the foregoing treatment, but so far no patients have returned, and far be it for a native to continue treatment after the signs and symptoms of disease disappear.

SYPHILIS

Syphilis is rampant in Siam. A native coming to the clinic invariably diagnoses his own case, and unfortunately he is not as a rule far off. But of the hundreds of cases of syphilis that I have seen, only three cases of syphilis of the nervous system have been noted. My experience as a member of the American Red Cross Sanitary Commission in the Balkans was the same. Various attempted explanations have been given, and I have thought that a race or people whose nervous system is not so "keen" as that of the modern twentieth century man might be more resistant, or perhaps not so susceptible, to the syphilitic virus. I might mention here that pellagra is not uncommon at all, but I never saw a case with nervous manifestations, and I felt sure that my explanation was soon to become an established fact, namely, that these dull nervous systems are not affected as a rule by the various poisons that do produce effects on more highly developed nervous organisms. But in view of the nervous manifestations of leprosy, beriberi and other diseases encountered, my explanation immediately loses force.

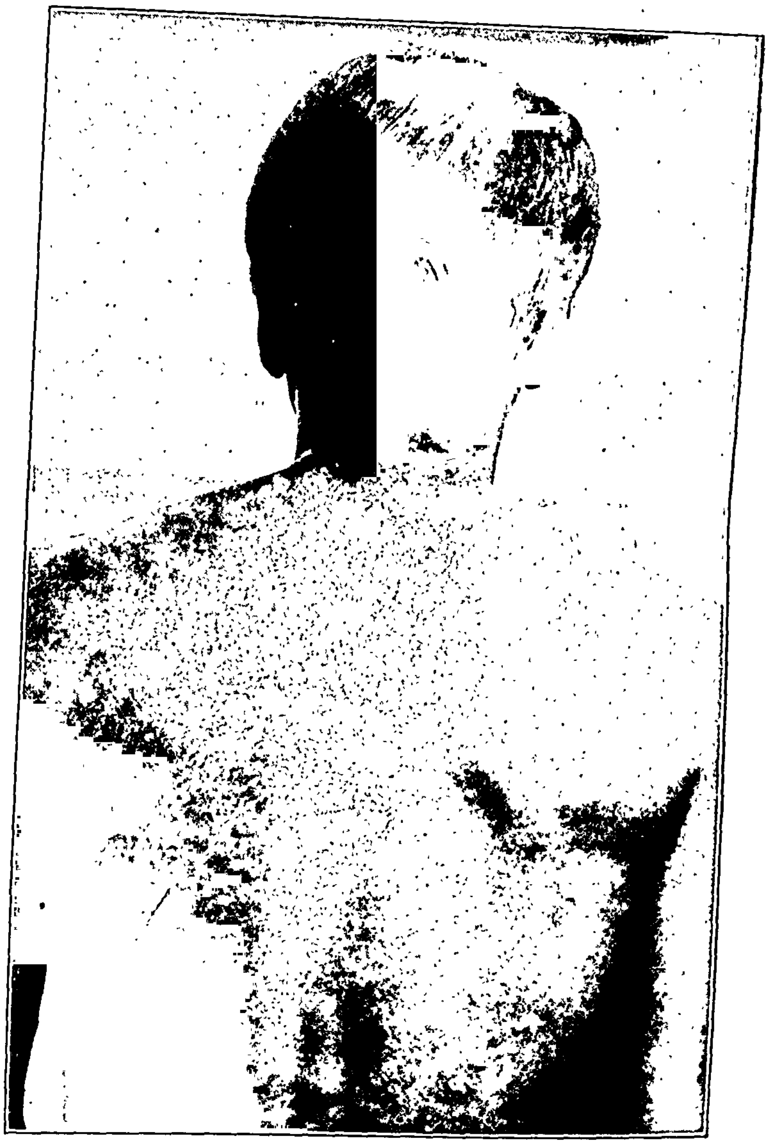
Fig. 6 (Case 4).—Leprosy: dorsal view of patient in April, 1918.

BERIBERI

Beriberi is very common in Siam. The great majority of the patients appearing in the clinic for treatment are policemen. They all give a history of having eaten polished rice. Most of the cases are of the dry type. These patients invariably refuse to remain in the hospital, but return home, as they usually receive from one to two months' leave, depending on the severity of the case. Most of them return in perfectly good condition because, living up-country, where the only rice they get is hand-milled, they get along very well without any other medication. I even suspect that, although they are impressed with the dangers of a diet of polished rice, they deliberately resume such a diet on their return to Bangkok in order to get sick and thus get sick leave.

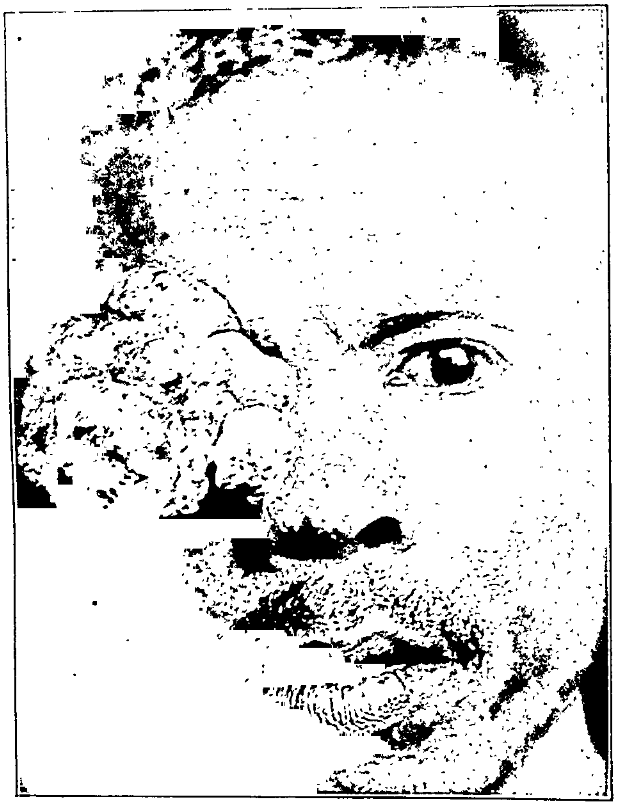

Fig. 7 (Case 5).—Melanotic sarcoma of choroid: front view of patient on entering the hospital.

PELLAGRA

As stated above, pellagra is not uncommon. The usual history is that of a recurring dermatitis during the hot season, as a rule limited to the hands and feet. The gastro-intestinal history is never lacking; and although gastro-intestinal difficulties are exceedingly prevalent in a tropical country, yet the most typical lesions and history establish the diagnosis beyond a doubt. These patients are never entirely free from the dermatitis, but during the "cold season" they are so very much improved as to consider themselves quite free from any irritating skin disease.

FEVERS

I found that in Bangkok malaria was extremely common, although it is commonly held that while up-country a great deal of malaria is to be found, in Bangkok such is not the case. I took particular pains to investigate the matter, and I found that between 20 and 25 per cent. of all blood films examined showed distinct evidence of malarial infection. These cases are practically all from the Central Hospital, and I think they represent very well the incidence of malaria in the city of Bangkok. I have seen no cases of pernicious malaria, the great majority of the cases being of the chronic subtertian type. Complications are not common.

In the prevention of the disease it is not to be expected that the native will take all of the precautions that the European will take, yet they all sleep under mosquito nets. The point I wish to make is that Europeans, at least the Europeans living in Bangkok, do not take the necessary precautions. I know of only one house in Bangkok that is screened. I occupied apartments in the Oriental Hotel, and up to the time of my arrival, although the hotel had been doing business several years, not one room in the entire building was screened. My screened apartments made a great "hit," and now the occupants of several of the other apartments are following suit.

BLACKWATER FEVER

Blackwater fever is seldom seen except up-country, where I understand it is not uncommon. I have seen two distinct cases in the city of Bangkok. One was imported from the hill country, and the other patient was a city dweller. Both patients recovered.

RAT-BITE FEVER

A number of cases of rat-bite fever appeared in the clinic. The cases were not unusual, and as stated above, in connection with frambesia, it being impossible to treat these spirochetal infections with arsphenamin on account of a lack of supply, liquor potasii arsenitis was the next best agent to be had at the clinic, and the results were satisfactory if not spectacular.

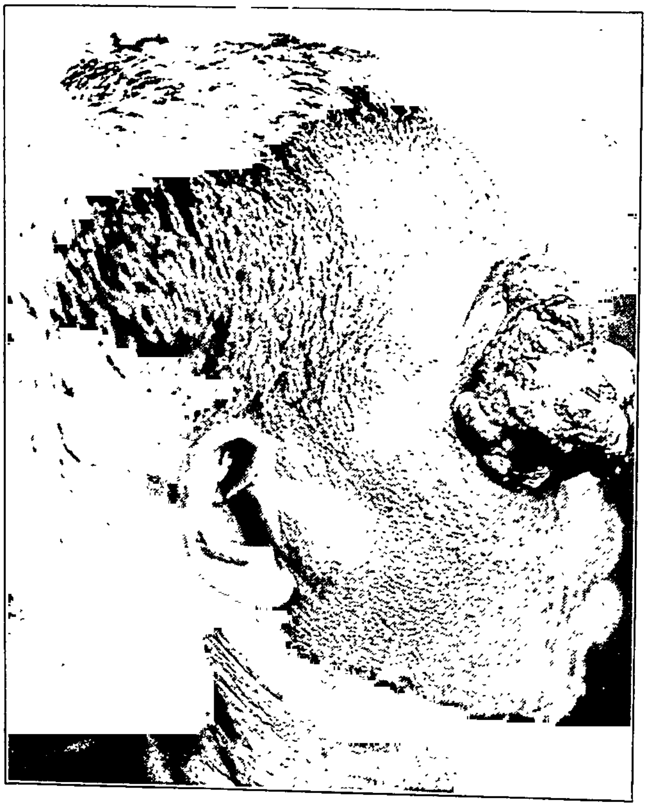

Fig. 8 (Case 5).—Melanotic sarcoma of choroid: side view of patient on entering the hospital.

DENGUE AND ALLIED FEVERS

Dengue is epidemic every year and plays havoc with the European population. The natives do not seem to suffer so much from it.

Phlebotomus fever is not uncommon. I have seen several cases in Europeans and many in the clinic. It usually runs a course of between twenty-four and thirty-six hours. Symptomatic treatment is the treatment so far and produces good results. The natives think a physician is especially clever to make it clear up in twenty-four hours.

RELAPSING FEVER

Relapsing fever is not very common; at least, that has been my experience. I had only two cases in which I could demonstrate the causative agent. These cases were both in native Siamese who had never been out of the country. One appeared, Feb. 3, 1918, and the other, May 13, 1918. Neither of the patients was acutely ill, and both complained of having been sick for several weeks. Continued observation was confirmed by blood examinations, and appropriate treatment produced satisfactory results. There were no complications except that one patient had a severe bronchitis that had not completely disappeared at the time he left the hospital.

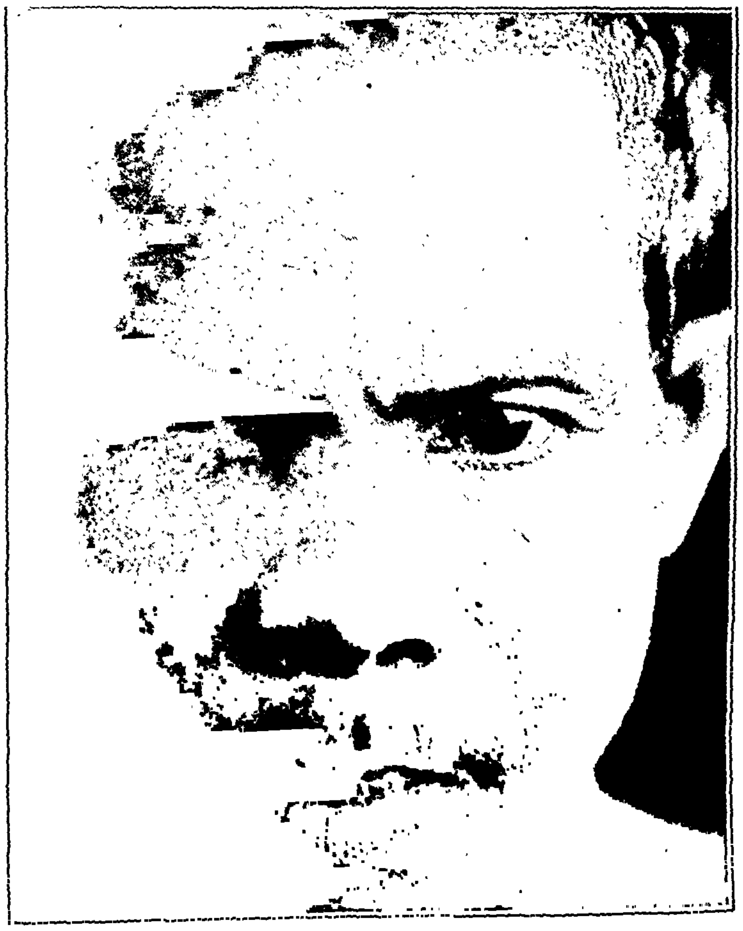

Fig. 9 (Case 5).—Melanotic sarcoma of choroid: appearance of patient on leaving the hospital.

TYPHOID FEVER

I myself have not seen a case of typhoid fever in a Siamese. Certainly there is typhoid fever there, and I have heard of cases, but I have not seen one in the clinic, and blood examinations have all been negative in cases that were remotely suspicious. I think that I am safe in stating that it is very uncommon, and the explanation is that the native has acquired an immunity. He lives on sewer water from birth, and if he is able to survive his infancy he is able successfully to fight almost any kind of intestinal infection. The European, on the other hand, drinks only bottled water and deep well water, and is the one who develops typhoid when exposed to infection. The only cases I heard of were in Europeans.

DYSENTERY

Dysentery is very common in Siam, both amebic and bacillary. An immunity for the dysenteries does not seem to have been acquired to such an extent as it has for typhoid. The combination of chronic amebic dysentery and opium smoking produces a pathologic syndrome that is hard to describe. Either one is bad enough, but the two together make a choice bit for the pathologist. My limited experience with emetin bismuth iodid has been most satisfactory.

INTESTINAL PARASITES

Intestinal parasites are very common, as in all tropical countries (the ameba being considered under the dysenteries). Ancylostomiasis is very prevalent, especially in the north, where, at the present time, an intensive campaign is being carried on by the International Health Board of the Rockefeller Foundation under the directorship of Dr. M. E. Barnes. The immediate results are very satisfactory, but unfortunately the government is not whole-heartedly in the scheme; consequently, permanent results cannot be expected. This is unfortunate, for if the Siamese government had been approached in the right manner originally, no doubt better results could now be expected in the important matter of prevention of reinfection.

CHOLERA

I have seen no cases of cholera, although a few years ago cholera was endemic and quite often epidemic. It is a fact that since the city has built the new and up-to-date water-works, cholera has disappeared. Now it so happens that the perfectly good city water supply does not supply the entire city. As a matter of fact, that part of the city of Bangkok that lies on the east side of the Menam River is not supplied at all, and many parts of the city proper still use the dirty water of the river; therefore, it cannot be said that the new water supply did away with cholera; it simply disappeared.

OTHER DISEASES

Next to venereal diseases comes tuberculosis in the matter of high rate of admissions to the outpatient department. Tuberculosis presents all of the complications. When I say tuberculosis I have in mind pulmonary disease. The Chinese seem to suffer more than the others. I think this is due to the fact that they insist on living on top of each other, so to speak. The other races, although crowded and dirty, do not occupy such terribly congested places as the Chinese. But at night they shut up everything tight, pull down the mosquito net, and proceed to infect each other by spitting, coughing and breathing the most foul air, and it is impossible to impress on them the necessity of pure air, sunshine, and other hygienic and sanitary measures. In regard to lung infections, I might state that pneumonia is not uncommon, especially among the soldiers. I think this is due to excessive training in the paddy-fields, the soldiers being made to remain for long periods of time in pools of water and other places equally bad; and often at night, when it gets quite chilly, one can see them tramping through the muddy fields on their way to the barracks. They immediately go to sleep without changing, and naturally many of them are taken ill.

I have seen a number of cases of bronchial spirochetosis, and while examining a number of cats for suspected plague I found one that had died of a lobar pneumonia, a mixed infection in which a spirochete that took the ordinary stains predominated.

VENEREAL DISEASES

By far the greatest number of cases seen in the clinic are venereal. These patients all come in after the disease has become chronic, and few of them return often enough to get cured. Complications are common, as is evidenced by the number of infants with eye infections.

In this connection I wish to mention a disease which, although not venereal, can be conveniently put under this heading, namely, climatic bubo. I have seen a great number of these cases, all presenting buboes in the groin, giving no history of any venereal infection, and a native's word in that respect can be taken, because he thinks nothing at all of such a disease. The cases come late; there is very seldom an acute case. The buboes are usually quite large, firm and not very tender, except in the acute cases. I have aspirated many of the patients just mentioned, and in every case in which a definite nonvenereal history has been given and in which there are no signs of infection on or near the parts, I have been unable to discover any organism. Symptomatic treatment is advised; the results are sometimes good and sometimes otherwise. In old, chronic cases, excision is the best treatment.

TETANUS

The French Hospital in Bangkok averages one case a day of tetanus in the new-born. How many cases must there then be every day in the whole of Siam? The patients with tetanus at the French Hospital are mostly Chinese, the mothers bringing the infants for burial more than for treatment, as they are superstitious about having a death in the house. The death rate is 100 per cent. On the contrary, tetanus is not very common in adults; there have been only two cases in the clinic during the last year and a half. This is interesting because practically all of the emergency surgery cases present dirty wounds, the native coming to the clinic with an old ulceration completely covered over with manure. A "manure plaster" is a household remedy. It seems that the adult has acquired an immunity to tetanus, but unfortunately this immunity is not transmitted to the offspring.

LEAD POISONING

I have had a number of cases that presented all the signs and symptoms of chronic lead poisoning, except the lead line. But this is explained by the fact that the natives chew betel nut, which leaves a deposit on the teeth and gums that is sometimes appalling in amount. I admit that the diagnosis in the first case or two was made by exclusion, but on inquiry I learned that all of the patients came from the same part of the country and that this particular district is noted for its huge deposits of lead, the natives evidently drinking the lead-laden water, or otherwise getting into their system the lead from these deposits.

Typhoid and Carriers.—Expect to trace every case of typhoid to contact with a carrier, either during or after a clinical or unrecognized course of the disease in the carrier.—*Weekly Bulletin, A. E. F.*

SYSTEMATIC CARE IN THE SEXUAL DISEASES *

JAMES BAYARD CLARK, M.D.
Major, M. C., U. S. Army
NEW YORK

In practically all but one branch of medicine, when the war broke out, there was a fairly well defined system which governed and held together the work of each department, and served as a basis whereby it could be lifted up, whole, as it were, and transferred into the army service as a useful and workable unit.

General surgery, for one, was well organized and prepared at once to begin creditable war work. The pathologic laboratory was laid out along such precise and practical lines that it was carried over with ease. Internal medicine, as ever, knew its way about and was ready on short notice to be mustered in and play its part; but the department of medicine which dealt with genito-urinary ills, the very one which was so sorely needed (and the one which will for a long time still in civil life be sorely needed) somehow or other did not seem to be held together in the same portable sense as the others. So the Medical Department of the Army was constrained to collect such loose pieces of this particular branch as could be found, and cement them into the semblance of a specialty and courageously meet the situation to which necessity and a drafted army gave such sudden birth. Since that time there has developed in our camps and cantonments and in our service abroad much that will go to make up a useful beginning in that campaign against the sexual infections which is now plainly ahead.

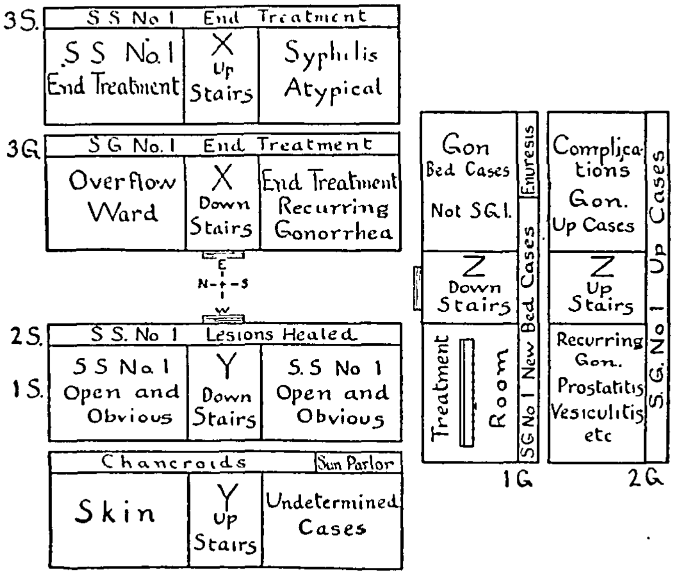

Fig. 1.—Floor plan of Buildings X, Y and Z, showing the promotion of patients according to their progress toward recovery.

THE WORK AT CAMP LOGAN

What has been done at Camp Logan to put the collective care of these infections on a rather more orderly basis, as well as to develop somewhat the prophylactic part of the work, is given with the hope that in some degree it may serve as a start for further development along the lines aimed at, which, failing prevention, are intended to encourage the treatment of these diseases at the earliest possible period of their onset, and by such means as will materially shorten the period of infection as well as give a more definite assurance of completeness of cure.

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* Owing to lack of space, this article is abbreviated in The Journal by the omission of several illustrations. It will appear in full in the author's reprints.

To lead the reader more agreeably as well as more graphically through the different departments and their workings, the steps in its description will be left as much as possible to illustrations and as little as possible to verbal explanation.

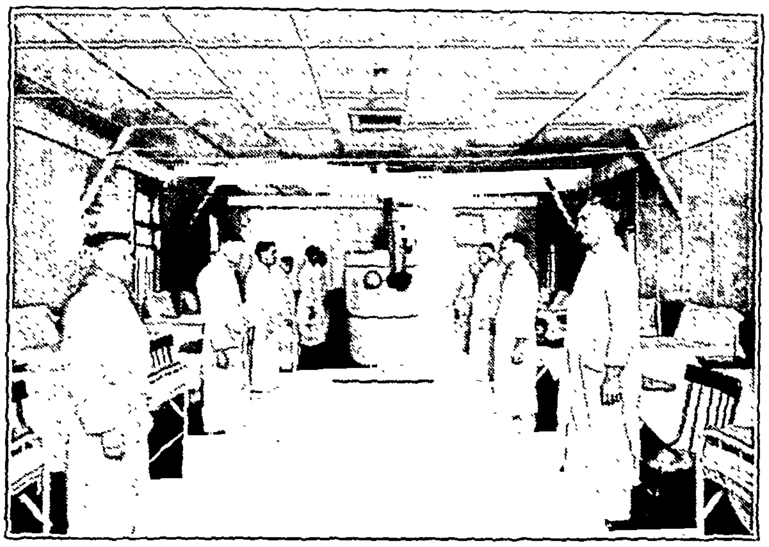


Fig. 4.—Typical ward.

The genito-urinary service, as it is now established at Camp Logan, may be looked on as a hospital within a hospital, and one that could be separated and act as an entity in an army camp or a community with but little modification or addition. One essential addition, if our plan were to be duplicated on an independent basis, would be a laboratory for the serologic and some other of our pathologic work which we have done in the central laboratory. Another addition would be an operating room equipment.

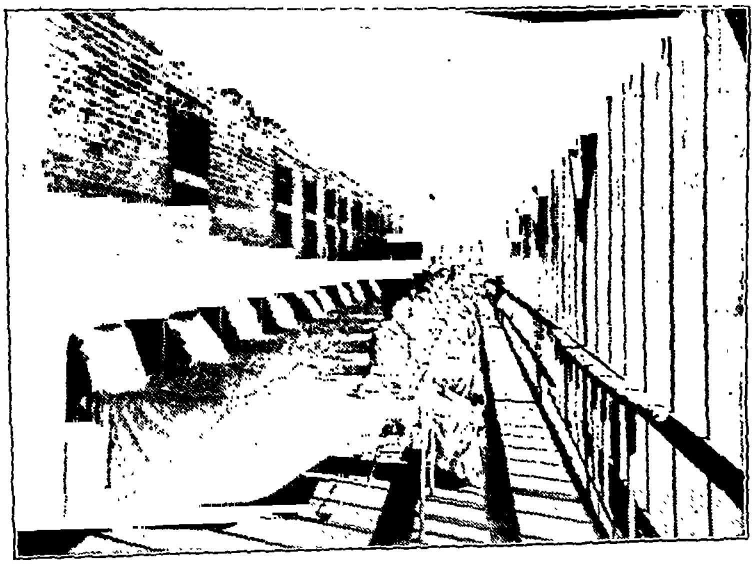


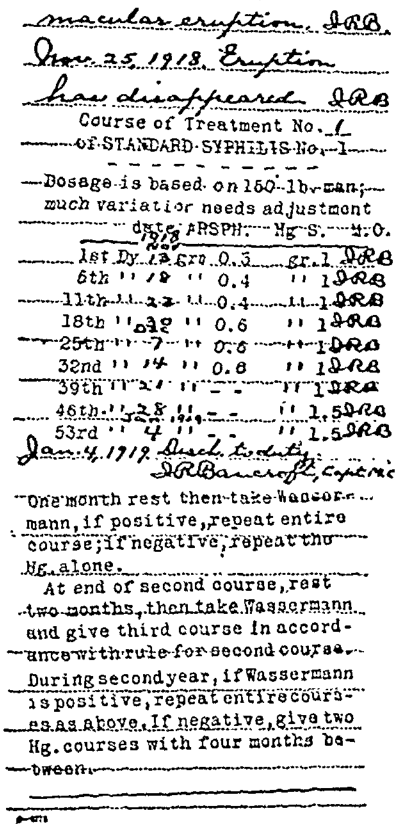
Fig. 5.—Typical porch.

Our bed capacity is about 300, divided between three two story buildings. The schematic floor plan (Fig. 1) shows how the patients are divided into ward groups according to their disease, and according to their progress toward recovery. This is a great simplification in the matter of diagnosis and treatment, and it serves as an encouraging stimulus to the patient as he graduates toward his cure. The plan also makes it easy for the ward surgeon to memorize accurately his patients and their conditions. On the upper floors are the "up" patients. This arrangement effects an economy, as no meal trays have to be carried upstairs, the "up" patients being able to go to mess. It is also a safeguard in case of fire, as these patients are all able to get away without requiring assistance.

Perhaps the best way to get a mental picture of the whole would be to make with me an imaginary daily round according to the usual routine.

By keeping the schematic floor plan in mind, the relation of the Buildings X, Y and Z will be remembered as they stand on three sides of a square. We start with Building X, on the left of the square. As we enter at 8:30 in the morning, our entrance is a signal for the morning assembly of ward surgeons, nurses and the ward men of that building (Fig. 2).

The conference serves several purposes: We start the day by a "good morning," and see that every one is present. Reports from the different heads are heard. The aim of our work, the policy of the proceedings, and the details, if necessary, of our duties are discussed. We have *no* secret diplomacy; we all know what we are heading for. In this way we all do our work happily and keep our balance.


SYPHILITIC REGISTER
PROGRESS OF CASE

Nov. 13 1918. Diffuse macular eruption. IRB.
Nov. 25, 1918. Eruption has disappeared IRB

Course of Treatment No. 1
of STANDARD SYPHILIS No. 1

Dosage is based on 150 lb. man; much variation needs adjustment

	date	ARSPH.	Hg S.	M.O.
1st Dy	1918 Nov 13	gr. 0.3	gr. 1	IRB
6th "	18	" 0.4	" 1	IRB
11th "	23	" 0.4	" 1	IRB
18th "	Dec 30	" 0.6	" 1	IRB
25th "	7	" 0.6	" 1	IRB
32nd "	14	" 0.8	" 1	IRB
39th "	21	" – –	" 1	IRB
46th "	28 1919 Jan	" – –	" 1.5	IRB
53rd "	4	" – –	" 1.5	IRB

Jan. 4, 1919. Disch. to duty.
IRBancroft, Capt. M.C.

One month rest then take Wassermann, if positive, repeat entire course; if negative, repeat the Hg. alone.

At end of second course, rest two months, then take Wassermann and give third course in accordance with rule for second course.

During second year, if Wassermann is positive, repeat entire courses as above. If negative, give two Hg. courses with four months between.

Fig. 8.—Syphilitic register stamped with Standard Syphilis No. 1.

This morning line up is usually only a matter of a few minutes, and is followed by a rapid inspection of the building and equipment. Next we go to Building Z and then to Building Y, for the same line up and inspection. When inspection is made, particular attention is paid to the appearance of the patients, especially the "up" patients; for to be clean and freshly shaved, neatly dressed and shoes polished means self respect, and that means quicker recovery and a better soldier or a better citizen, as well as better deportment while in the hospital. A barber shop (Fig. 3), where surgical cleanliness is actually carried out, was installed for the use of the patients on this service.

After inspection in Building Y is completed (9 o'clock), professional rounds are begun at this point (Figs. 4 and 5). This building is for the care of syphilis, chancroids and skin cases. With a study of the forms here illustrated, which guide and control our treatment of syphilis, only a brief explanation will be necessary. With the formula Standard Syphilis No. 1 will be seen the procedure followed in all ordinary early cases. I am indebted to Col. L. W. Harrison, D.S.O., K.H.P., for much of the groundwork of this plan, as well as for other valued suggestions he gave me while going over the British war hospitals for these diseases in the spring of 1918.

The treatment thus outlined has a number of advantages hitherto not included in the care of syphilis. Into its category can come the bulk of the early cases. Once it has been decided on for the patient, and, as I have observed, it is applicable in the great majority of cases, that patient is launched with a reliable ticket which should carry him safely to the end of his course.

The patient's satisfaction on being so securely carried along is no small part of his progress toward recovery; and the surgeon's obligation to see his patient through is immensely lightened by having so many steps decided at one stroke. In the collective care of these cases, which come along in classes of ten or a dozen each, the time saving is tremendous. The results so far with this plan of treatment have been entirely satisfactory. With this simple formula before us we are kept up to the observance of all the little but essential factors that go with the guidance and technical medicinal care of syphilitic infection.

STANDARD SYPHILIS NO. 1

A routine course of treatment for ordinary fresh cases of syphilis in otherwise healthy men (to be interrupted in the event of dermatitis, jaundice, or other signs of intolerance supervening).—Each patient to be carefully scrutinized for signs of stomatitis or general malaise, his weight to be taken, and his urine tested before each injection.

In conjunction with the employment of this course of treatment, each medical officer shall be familiar with "Proposed Modification of Circular No. 14, W. D., Office of the Surgeon-General."

Patients are to be treated at base hospital until open lesions are healed, when they will be sent to development battalion or regimental surgeon for completion of treatment.

The scheme of arsphenamin dosage is based on 150 pound men, or 1 decigram to about 30 pounds of body weight.

	Arsphenamin (Intravenously) Gm.	Mercuric Salicylate, 33 Per Cent. in Olive Oil (Intramuscularly) Grains
First day	0.3	1.0
Sixth day	0.4	1.0
Eleventh day	0.4	1.0
Eighteenth day	0.6	1.0
Twenty-fifth day	0.6	1.0
Thirty-second day	0.6	1.0
Thirty-ninth day	...	1.0
Forty-sixth day	...	1.5
Fifty-third day	...	1.5

One month rest, then take Wassermann; if positive, repeat entire course; if negative, repeat the mercury alone.

At the end of second course, rest two months; then take Wassermann, and give third course in accordance with rule for second course.

During second year, if Wassermann is positive repeat entire courses as above. If negative, give two mercury courses with four months between.

With this word of explanation as to the care of syphilis we will continue our rounds in Building Y. We first go into the ward for early cases of syphilis, before the lesions are healed or the skin eruptions have vanished, and then to the wards to which, in the course of treatment, they have been advanced, and where they are free from the obvious signs of infection (Fig. 8).

A sunny porch is set aside for patients with chancroids. Here are seen the patients with their sores exposed to the sun, which heals rapidly the majority thus infected, without much of other treatment save constant cleanliness. All patients with chancroids are kept constantly under observation for a syphilitic infection, and a surprisingly large number are found thus doubly infected. From here we visit the ward for skin cases and so finish our rounds in Building Y.

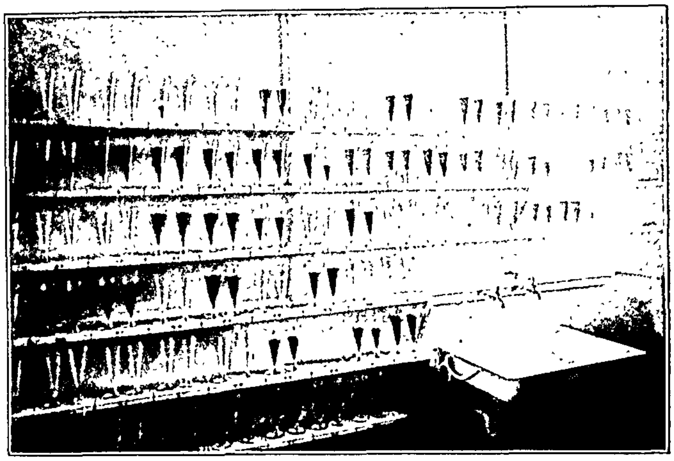


Fig. 9.—A wall of the two glass test room.

TREATMENT OF GONORRHEA

Next we go to Building Z, equipped for the care of gonococcus infections. Here it is we have set for ourselves a special task, and one which hitherto has had scant attention. With the chronic and complicated cases we carry out with care all of the well known and well tried modes of treatment that have gained for themselves some clean-cut claim to merit, and by these means remove, as far as possible, from these scarred and strictured and generally outraged tissues, the infection present. Resentful as the surgeon often becomes at this vast army of recurring chronics, these uncured and complicated cases which stumble on from one stage to another, it would hardly at present be fair to put these cases all down to the blunders of either medical misattention or blame the patients themselves, because no suitable standard for the successful care of the early infection has yet been set. So it is in these acute cases, in which the infection is freshly contracted,

Fig. 10.—Treatment trough.

that we have laid out for ourselves the special task to see what proportion of these patients it is possible to bring to a complete and early cure, before the gonococcus has invaded to any extent the urethral glands or follicles or extended back of the membranous urethra which guards the openings of the prostatic and seminal ducts.

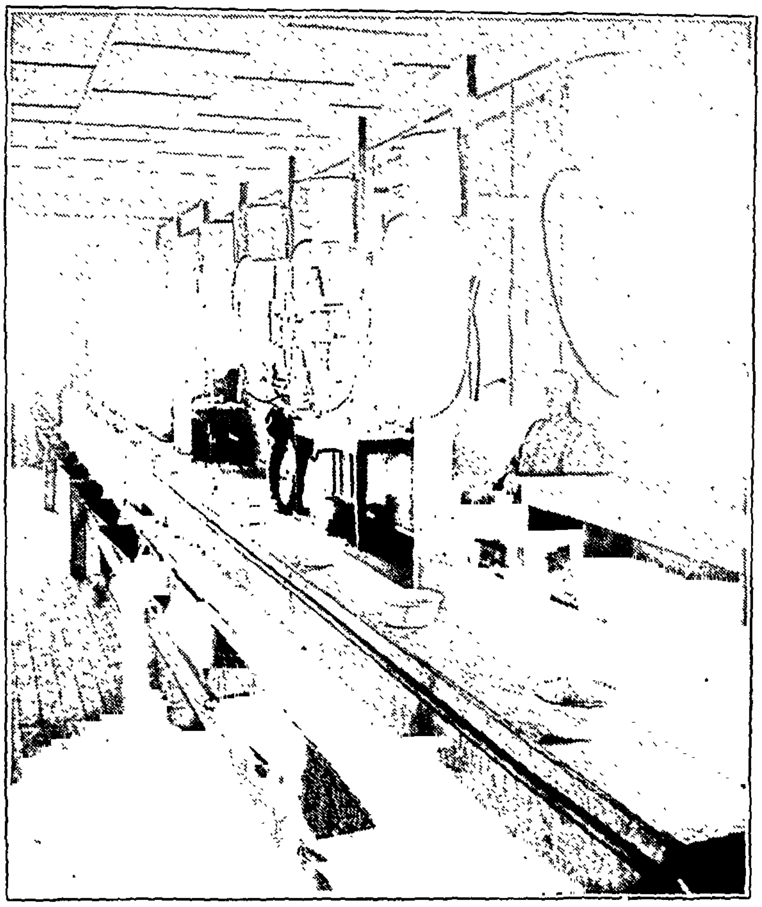


Fig. 11.—Treatment trough.

To this end a uniform treatment has been adopted which goes by the name of Standard Gonorrhea No. 1.

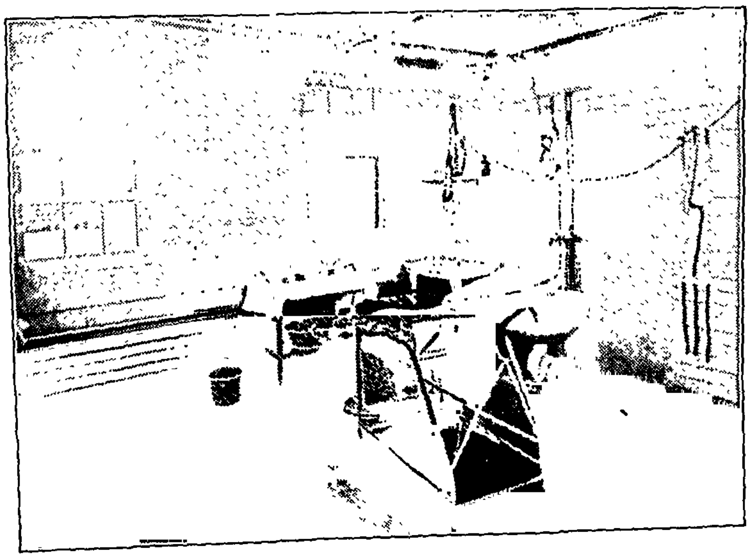


Fig. 15.—Cystoscopic room.

A brief study of this will show that it is nothing more than a succession of safe and simple steps—marked off into periods or phases. But only by thus standardizing some plan and carefully pursuing it is it possible to tell by what means the disease can most successfully be treated. To many medical men this plan will doubtless appear impracticable; but what they mean when they use that term is, probably, "inconvenient"; for none whose minds are capable of measuring the human cost incident to gonococcus infection can fail to know that a cure for this disease at any cost is cheap. The thing of immediate interest here, however, is the results obtained, and these results, so far as we have been able to follow our cases discharged as cured, are far beyond the expectation with which we began this experiment.

STANDARD GONORRHEA NO. 1

A routine course of treatment for ordinary, early and uncomplicated cases of gonorrhea in otherwise healthy men. Employed at base hospital and continued at development battalion or by regimental surgeon (to be interrupted in event of complications or intolerance).

DURING FIRST TWO WEEKS

In bed from four to eight days, then "up" if inflammation has subsided. Bland diet. Two glass test each morning with first urination. Smear on Monday and Thursday mornings, before urination. Sandalwood oil, 5 minims three times a day, after eating, and increase 5 minims daily until 15 minims three times a day, after eating; then decrease 5 minims daily. Irrigation twice daily (at 5 feet, patient standing) with potassium permanganate, 1:8,000, from 105 to 115 F. The irrigation not to be "through," i. e., into the bladder, until the patient can relax without the *slightest discomfort.* Hand injections to be used while infection remains anterior.

DURING SECOND TWO WEEKS

Bland diet continued. Patient should be up all day, and doing from two to four hours of light work. Two glass test and smear as before. Do not repeat Sandalwood oil course, if improvement is marked as it should be. Irrigation twice daily as before, with potassium permanganate solution, 1:6,000 at 6 feet, or injections if infection is still anterior.

DURING THIRD TWO WEEKS

Diet bland, but increased. Patient should be having from three to six hours daily of light work. Two glass test and smear as before. If any discharge or cloudiness of urine is present, potassium permanganate, 1:4,000, irrigation.

When free from symptoms (no discharge and clear urine) for two weeks without treatment, and doing from three to six hours' work daily, the patient in most cases may be considered fit for duty and infection free.

Note.—In seeking a useful basis of treatment for the ordinary run of gonorrheal cases, it can be easily understood that no lesson of value can be learned unless the plan laid down is followed accurately in every detail.

Each medical officer should keep himself familiar with the Little Red Book of treatment from the Surgeon-General.

RESULTS OF TREATMENT

The curative results of treatment in the first twenty-eight cases with Standard Gonorrhea No. 1 have been based on the following:

1. Before being taken off treatment: (*a*) no discharge; (*b*) urine clear; (*c*) gonococcus free, for a period of ten days.
2. With no treatment: with no restriction of activity; with no signs of disease, for two weeks.

The average time for cure, which includes the two weeks period of observation, has been from five to six weeks.

So far as we can tell, none of these patients have had a recurrence.

Of those who had had previous infections, in whose cases treatment was begun for a fresh infection (not recurrence) within the first two weeks, 66 per cent. were returned to duty cured, and 33 per cent. improved.

Of those who had had no previous infection, in whose cases treatment was begun during the second week of the disease, 80 per cent. were returned to duty cured, and 20 per cent. improved.

Of those who had had no previous infection, in whose cases treatment was begun during the first week of the disease, 90 per cent. were returned to duty cured, and 10 per cent. improved. In the last class, the percentage was drawn from twenty cases. The uncomfortable fatality of setting a new figure is the future obligation it sets on all time ahead to meet or pass it.

WARD Z

Base Hospital, Camp Logan, Texas

STEPS TO BE FOLLOWED IN USING THE TREATMENT TROUGH

Treatment hours, 6 a. m. and 2 p. m.

1. A list of the patients to be treated, with the treatment they are to receive, will be prepared before each treatment hour.
2. All sterilization, solutions and dressings will be ready for use at the treatment hours.
3. Patients will be called in groups up to the number of fifteen and in accord with the treatment they are to receive. Those who have "anterior injections" come first; those getting "through" irrigations come after.
4. When patients are lined up according to the list, they will proceed according to the following instructions:

(1) Disrobe.
(2) Remove soiled dressings.
(3) Urinate.
(4) Wash. Flush out urethra. Injections: Fill urethra and hold one m. Fill again and hold as above.
(5) Do not hurry. Irrigations: Flush out urethra. Fill bladder and evacuate. Fill bladder again and evacuate.
(6) Butterfly dressing.
(7) Dress up.
(8) Dismissed.

NOTE TO ATTENDING MEDICAL OFFICER

Each of the above steps to be carried out with precision. Each patient to be watched and guided where necessary. It is all important that patients are not hurried with their injections or irrigations, and that even the slightest pain is avoided in the treatment.

Major J. B. Clark, M. C.,
Chief of the Genito-Urinary Service.

EQUIPMENT

On continuing our rounds, the practical means and equipment used in this treatment will be seen. As noted on Standard Gonorrhea No. 1, it will be seen that the daily urine is studied by a two glass test of the *first* urination of the day. This is essential to successful treatment of gonococcus infection and is made simple by a room fitted for the purpose, a wall of which is shown in Figure 9. In this room, on Monday and Thursday mornings, smears are taken before the urination, in order to note the time the gonococcus disappears. Next we see the treatment room (Figs. 10, 11 and 12). Here it is possible to treat, collectively, fifteen patients with the same attention we might give to one, as a study of the injection and irrigation trough will show.

DETAILS OF TREATMENT

This equipment has been devised to insure accuracy in the matter of irrigations or injections, and to prevent the slightest possibility of injury to the patient. The standing position for irrigations is chosen because it is in this position that the male most readily relaxes the external urinary sphincter. The treatments are always carried out under the direction of a medical officer, who gives personal attention to each of the patients to see that they carry out properly the treatment, which has been taught them in small groups at the beginning of their care. It will be noted that all forms of treatment in this service are carried out by the medical officers; nothing is left to the chance care of attendants. The work has been so systematized that this is possible. The form that directs the trough treatment shows the manner in which it is carried out, and the lesson in cleanliness it conveys to the patient. After his dressing is collected by an orderly, he is directed to wash the hands and penis with the cotton ball placed in the bowl of mercuric chlorid in front of him. Each patient receives a freshly sterilized tip or syringe for his treatment, and is given a fresh dressing at the finish. The greatest watchfulness is at all times exercised to see that all patients are protected with these dressings. The time taken to treat each group is eight or ten minutes without the slightest hurry. To

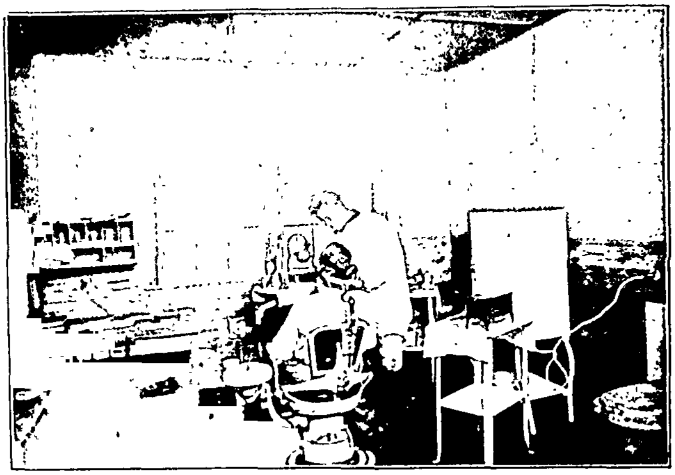


Fig. 16.—Dental operating room.

Fig. 17.—Class in graduated exercises.

proceed with our rounds in this building, we come first to the patients who are freshly infected and in bed.

Which elements of the four essential ones in this treatment are the most important it would be rather hard to say: (1) the rest in bed and bland diet; (2) the confidence sustained by an obviously intelligent attention; (3) the local treatment, or (4) the simple sandalwood oil medicine.

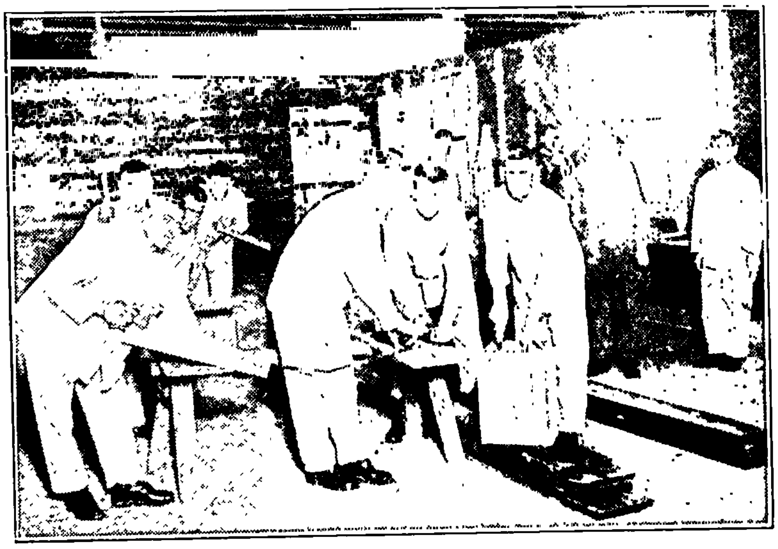
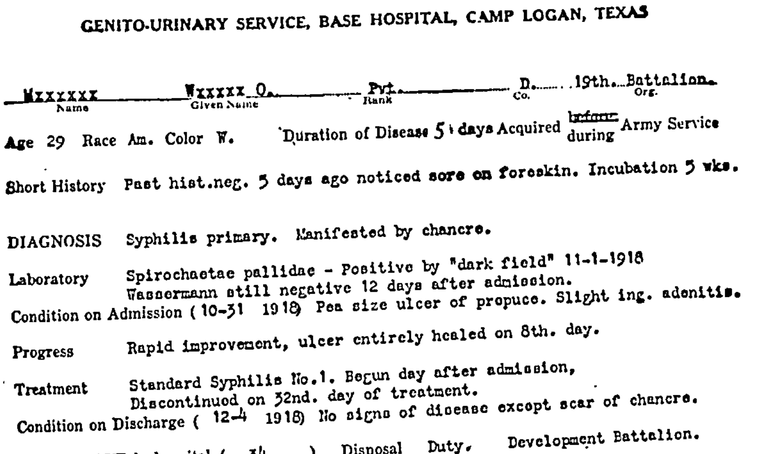


Fig. 18.—Class in carpentry.

These patients are from four to eight days in bed, the duration depending on the severity of the inflammation. They are carefully instructed as to the dangers of their disease, and our aim to give them a sure and speedy cure. When they are allowed to get up it is for two hours the first day, four hours the next, six hours the next, then all day, and they are promoted to the "up" patient ward. The progress sheet of the clinical record will show how their progress is noted and followed (Fig. 14).



GENITO-URINARY SERVICE, BASE HOSPITAL, CAMP LOGAN, TEXAS

Mxxxxxx Name Wxxxxx O. Given Name Pvt. Rank D. Co. 19th. Battalion. Org.

Age 29 Race Am. Color W. Duration of Disease 5 days Acquired ~~before~~ during Army Service

Short History Past hist.neg. 5 days ago noticed sore on foreskin. Incubation 5 wks.

DIAGNOSIS Syphilis primary. Manifested by chancre.

Laboratory Spirochaetae pallidae - Positive by "dark field" 11-1-1918
Wassermann still negative 12 days after admission.

Condition on Admission (10-31 1918) Pea size ulcer of propuce. Slight ing. adenitis.

Progress Rapid improvement, ulcer entirely healed on 8th. day.

Treatment Standard Syphilis No.1. Begun day after admission,
Discontinued on 32nd. day of treatment.

Condition on Discharge (12-4 1918) No signs of disease except scar of chancre.

Number DAYS in hospital (34) Disposal Duty. Development Battalion.

Treatment advised Continuation of Standard Syphilis No.1. Case Incomplete

Note—These cards in duplicate. One for file. One with patient, to be filled on reverse and returned to Base Hospital when patient is discharged from treatment.

Fig. 19.—Record card, reflecting in a few words the entire activity of the genito-urinary service.

We then pass through the other wards where those in whom the disease is chronic and those who are crippled are installed—the harvest of other days and other ways of caring for this common malady, the very harvest we are trying out a means to minimize. Leaving Building Z and our medical officers there busy in the treatment room with the "chronics," we go to Building X, where we are watching the end-results of Standard Gonorrhea No. 1. The acutely infected are treated on the lower floor; the terminal treatment of the first course of Standard Syphilis No. 1 is given on the upper floor. Through the coming of the armistice, the facilities for carrying along treatment outside of the base hospital have been sufficiently curtailed to justify the keeping of our patients somewhat longer than would otherwise have been done. This has served well the purpose of putting our plans of treatment on a firmer footing, and incidentally we believe has promoted the interest of the government by giving these men their treatment under the best available conditions.

OUTLYING INTERESTS

In the afternoon we start out for a visit to our outlying interests that are a part of the service. The room for cystoscopy and pyelography (Fig. 15) is in the operating pavilion in connection with the roentgen-ray department. This proves by experience to be but a small part of the Army genito-urinary work.

Figure 16 illustrates an important phase of our service: that of a dentist devoting his entire time to sexual disease work. The equipment includes a steam sterilizing apparatus—a thing seldom seen in a dentist's operating outfit. Here, when the teeth of the syphilitic are treated, the work is done under scientific surgical precautions. With a dentist keeping the teeth of our patients in order, we have seen no signs of stomatitis or salivation. This work is preventive as well as restorative. Weekly lectures with tooth brush demonstrations are given in all the wards. The teeth of all new patients are immediately examined, and necessary cleaning and repairing attended to.

Next we visit one of our classes in physical exercises (Fig. 7). As soon as patients are able to take on this activity it is added to their daily regimen and graduated according to the case. Later are added classes in manual labor, such as carpenter work (Fig. 18).

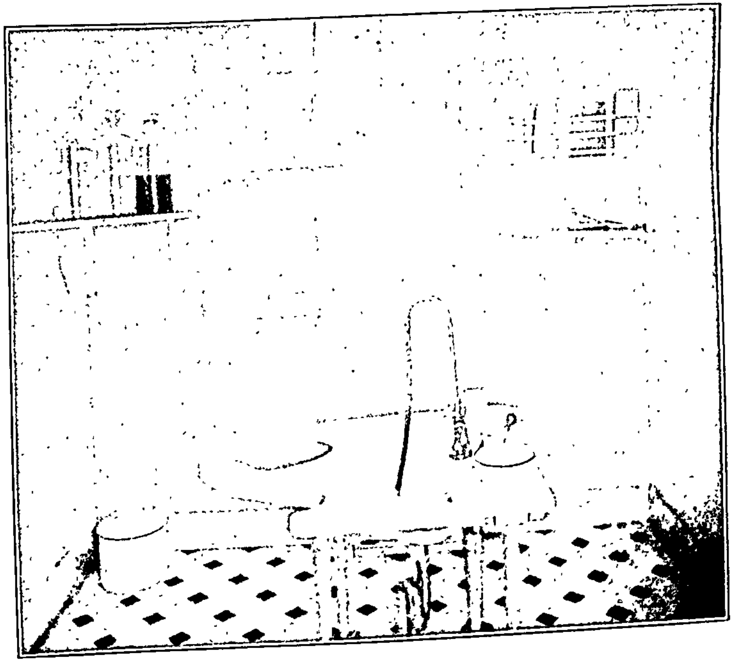


Fig. 20.—Model prophylaxis room.

These classes have the triple advantage of diversion, education and health-restoring activity. A final card record (Fig. 19) is made of all patients as they are discharged from the hospital. These cards in terse terms record the entire activity of the service, and from them statistics can be drawn, or studies for the improvement of our work can be made. They are made in duplicate so that a copy can be sent with the patient in case his treatment has not been completed at the hospital. In this way they serve as a follow-up system; for the card sent with the patient has the continuation of his treatment noted on its back, and when the case is complete the card is returned to go with its fellow in our file, thus bringing our record to a conclusion.

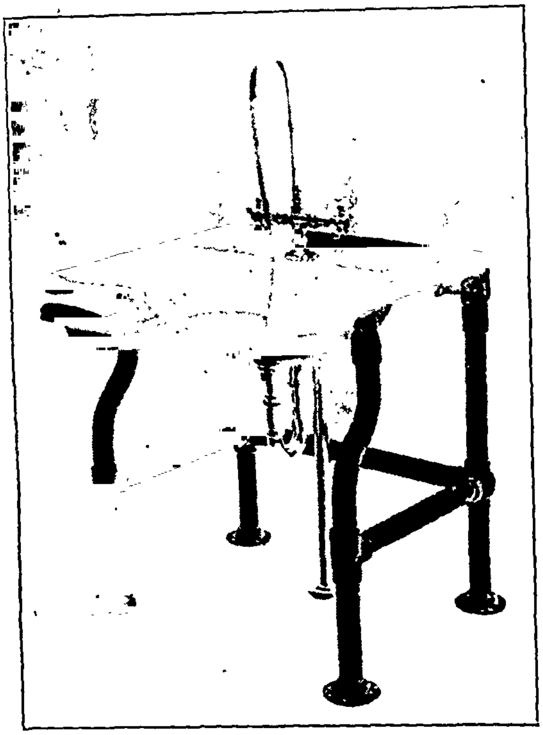


Fig. 21.—New straddle stand.

Last we visit the prophylaxis station for the detachment, but under the direction of the genito-urinary service. Here it is that we have attempted from the scientific standpoint to make a model prophylaxis room (Fig. 20), using the straddle stand (Figs. 21 and 22) as the operating center of the room and putting on two or three wall shelves all the simple equipment needed for this work. As this part of our work is being described in another article, it would be superfluous to make more than this mention, for the sake of completeness here.

CONCLUSION

In this paper an effort has been made to bring only those things into the foreground that are somewhat of a departure from the ordinary beaten track. It is regretted that they could not have been dealt with more in detail; but it has seemed best to show them from a bird's-eye view and thus get a rather more general impression of the whole as representing a systematic scheme for this department of medicine.

John Hunter's Ideas About Gunshot Wounds.—Hunter was the first clearly to appreciate and teach that in the gunshot wounds of his time "a part of the solids surrounding a wound is deadened . . . and is afterward thrown off as a slough which prevents such wounds healing by the first intention." He pointed out how the separation of a slough might open a part of a large artery or a portion of intestine. He realized that "the greater the velocity of the bullet the cleaner it wounds the (soft) parts." He noticed that "when the velocity is small the direction of the wound produced by the ball will, in common, not be so straight, therefore its direction not so readily ascertained, arising from the easy turn of the ball."—Sir Anthony Bowlby, *British Medical Journal.*

MYASTHENIA GRAVIS

WITH REPORT OF A CASE *

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NEW YORK

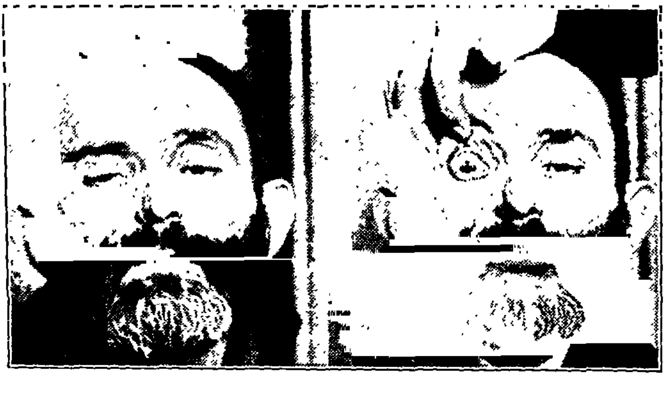
In order to appreciate the clinical picture of this remarkable affection, it seems appropriate to preface the description of the case with a definition of myasthenia gravis. This affection is characterized by McCarthy as "a disease with fatigue symptoms referable to the muscular system due to an exhausted condition of nervous enervation without definite pathology in the nervous system and with minor changes (lymphocytic infiltration) in the muscles."

To Wilkes belongs the credit of first accurately describing this disease. Subsequently Erb, Oppenheim, Eisenlohr, Bernhardt, Strümpell, Campbell and Bramwell, in a series of articles and reports of cases, definitely established the clinical entity of the malady. Goldflam's contention that the disease is not immediately fatal and may be subject to marked remissions over a lengthy period is borne out by our patient, whose history dates back nearly five years.

The relation of the disease to the endocrine disturbances, while not conclusive, is at least highly suggestive; for there is increasing evidence that a dysfunction of the glands of internal secretion plays a considerable rôle in the myopathic affections.

REPORT OF CASE

History.—A man, aged 48, born in Russia, a teacher of Hebrew, complained of double vision, bilateral weakness of upper and lower extremities, and inability to masticate food for any continuous time, or to carry on a lengthy conversation. Early fatigue accompanied every voluntary effort, whether walking, manual activity, the eating of food or the effort of speech. He was quite sure as to the time of the onset, which dated back nearly five years. At that time, as he expressed it, he left his home in his usual good health, and after proceeding a short distance he suddenly crumpled up on the sidewalk. Loss of voluntary power was present to such a degree that some passing strangers had practically to carry him to his home. He was put to bed, where after a short rest he regained considerable strength and motor activity. A day or two, however, after arising, he found that



Oculomotor exhaustion after looking at a fixed spot for a considerable period, and raising of ptosed lid, which patient is unable to do voluntarily after period of oculomotor exhaustion.

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* From the Service of Dr. Henry W. Frauenthal, Hospital for Deformities and Joint Diseases. Patient presented to the Clinical Society, Feb. 11, 1919, and to the Harlem Medical Society, March 11, 1919.

he was unable to dress or undress himself. His eyelids, which were apparently in proper position at the start of the day, assumed a drooping, ptosed position as the day advanced. Often the ptosis was so complete that in order to see he had to elevate the drooping eyelids with his fingers. He was unable to follow his vocation, because in pronouncing the benediction or prayers during a ceremonial, his voice, which at first seemed quite strong and resonant, gradually assumed a nasal character and then was completely lost. After a short rest he was again able to resume. This state of affairs caused him considerable embarrassment and humiliation and forced him to abandon his calling.

In masticating his food, the conduct of the masseters and temporal muscles varied. At times he was able to finish his meals without incident. At other times after several chewing efforts his jaws relaxed and apparently lost their power. After a variable rest he was able to resume, only to have the same loss of voluntary power recur.

In the act of walking, similar conduct on the part of his motor control was manifest. He often fell, and showed numerous cuts and bruises as a result of these unheralded prostrations to the ground. He was quite sure that his symptoms were not progressing. On the contrary, he thought that he was improving slightly. In the patient's own words, all of his initial symptoms were present, but they varied from day to day. On rare occasions the discomfort of all the symptoms of the malady held full sway. He complained of no pain, slept well, had a good appetite, and had no cardiac, renal, pulmonary, vesical nor visceral disturbances.

His habits were good. He was a moderate smoker, and drank occasionally. His previous history gave no clue to the development of the malady. He insisted that he had always enjoyed good health, and he did not recall any acute illness

His family history was also barren of information. His mother died of cerebral hemorrhage. A brother died suddenly at the age of 24, following an operation for some intracranial disturbance.

Examination.—There were no abnormal attitudes of the voluntary motor system noted, with the possible exception of the tilting of the head backward so as to enable the patient to overcome his visual difficulties resulting from the ptosis of the eyelids. No deformities were noted. The gait was normal: all the phases of pelvic, thigh, leg and foot motion were normally performed in sequence. All types of coordinative effort—both of equilibratory and nonequilibratory type were normally performed. No dysmetria was noted. All rapidly repeated pronation and supination movements were normally performed. All skilled test acts were performed in a satisfactory manner. There were no tremors, twitchings, choreiform movements, athetosis nor spasms.

Examination of the deep reflexes revealed moderate hyperreflexia of the jaw muscles, pectorals, biceps, triceps, radial, ulnar, suprapatellar, patellar, Achilles tendon and periosteal. Equality in reflex action was present on both sides. Of the superficial reflexes, the ciliospinal, supra-umbilical, suprapubic, upper and lower lateral abdominal and cremasteric reflexes were equal and present on both sides. No pathologic reflexes, such as the Babinski, Gordon, Schaefer, Oppenheim or Chaddock, were in evidence.

Decided impairment in muscle strength was noted in the entire somatic musculature. This embraced all possible forms of muscular effort, such as flexion, extension, rotation, abduction and adduction. No atrophy nor hypertrophy of the muscles was noted. Hypotonia or hypertonia was absent.

Rapid exhaustion of faradic irritability was in evidence, and was particularly marked in the muscles of the shoulder girdle and the muscles of the thigh. Thus we have the myasthenic reaction of Jolly, which is pathognomonic of this affection.

No abnormal associated movements were noted.

General sensory examination revealed acuity, localization and discrimination normal for touch, pain, temperature, pressure and muscle-tendon sense. Stereognosis and barognosis tests were performed in a satisfactory manner.

Marked weakness was noted in the muscles of the oculomotor apparatus (third, fourth and sixth). Weakness of the motor portion of the fifth nerve was present. Facial innervation was slightly impaired. All other cranial nerves were intact and performed their functions in a normal manner.

The mental status was apparently normal.

Systemic and laboratory examinations detected no noteworthy abnormalities.

CONCLUSIONS

The diagnosis of myasthenia gravis seems perfectly obvious and justifiable when in retrospect we consider the onset and the peculiar vagaries on the part of the voluntary motor system when they were called on for any type of continuous effort. Surely no affection either of the upper or the lower motor neurons is capable of producing such a clinical picture. Were neurons actually involved, we should be confronted by clinical features of a chronic progressive character, paralytic in type, involving the nuclei in the bulb or the cells in the ventral horns. Reflex changes and alterations in electrical behavior different from those we have observed would be present. On the contrary, we have noted the transitory character of the paralysis, present only after continuous effort and always disappearing after the effort has been expended and the muscles have had time to recuperate. The peculiar electrical phenomena, alien to any affections of the neural axis per se, put a final stamp on the diagnosis.

Note.—Since this report was written, a case referred to me by Dr. M. J. Mandelbaum for double ophthalmoplegia proved to be one of myasthenia gravis. The oculomotor disturbance has lasted for five years and is the only symptom present. Goldflam has called attention to this in his writings. The myasthenic reaction is present, but all other neurologic data are uniformly negative.

370 Central Park West.

MODEL BARRACK FOR PREVENTION OF RESPIRATORY DISEASES IN THE ARMY

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Colonel, M. C., U. S. Army
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A study of the sick rate in camps and cantonments shows that the greatest morbidity and mortality have come from the respiratory infections, and it is undoubted that they are favored by crowding in poorly ventilated dormitories or squad rooms, which reduces resistance and directly favors irritative laryngeal and nasal reflexes whereby coughing and sneezing are promoted, which in turn spread the infection. When the opposite conditions are maintained, when men have plenty of fresh air and are separated, these diseases immediately decrease. As at present designed and administered, the army squad room will be held directly responsible for our present morbidity and mortality statistics, because it is usually a combination sleeping and lounging room. It is usually overcrowded, and at night is filled with vitiated atmosphere still further polluted and affected with men with irritative coughs.

The ventilation of the squad room, no matter what type of ventilation is installed, invariably depends on the pleasure of the occupants, since windows are opened and closed by individual preference, notwithstanding existing orders to the contrary, especially in cold weather and when winds are blowing.

The warmth of the squad room depends on a number of factors; the construction of the building itself may be faulty, allowing drafts and leakage of cold air from unexpected quarters; the heating system may be inadequate for the use of the building or faulty in application, and it depends finally on the faithfulness of some individual stoker. As a result of this combination of circumstances, the squad room is in reality an excellent incubator for the cross-infection of respiratory diseases.

Hitherto the number of occupants in a squad room has been based on the number of square feet in the floor or cubic feet in the room, which, in my opinion, is a faulty standard, as the conditions sought to be obtained are fresh air, plus warmth, minus crowding, which result is nullified by the circumstances mentioned above.

The ideal sleeping quarters are those wherein the person gets a maximum of fresh air and is sufficiently removed from other persons or protected by screening as to prevent cross-infection. A bivouac with one man to a shelter tent would be the ideal situation.

In seeking to attain fresh air, the popular objection is immediately made that the sleepers will take cold. This is a matter which can be regulated by proper clothing, which includes a nightcap or knitted wool helmet. The objection, therefore, is not valid.

A MODEL BARRACK

I present herewith some plans for a model barrack for a company. The sanitary features are:

(*a*) The sleeping room is divorced from the lounging room, whereby the sleeping room is occupied only during the sleeping hours by the sleepers.

(*b*) There is a *cloth window* at the head of each bed whereby each sleeper will receive fresh air continually without drafts.

(*c*) Each sleeper will be screened from other sleepers so as to cut off the chances of cross-infection by a solid cough screen of beaver board and a curtain.

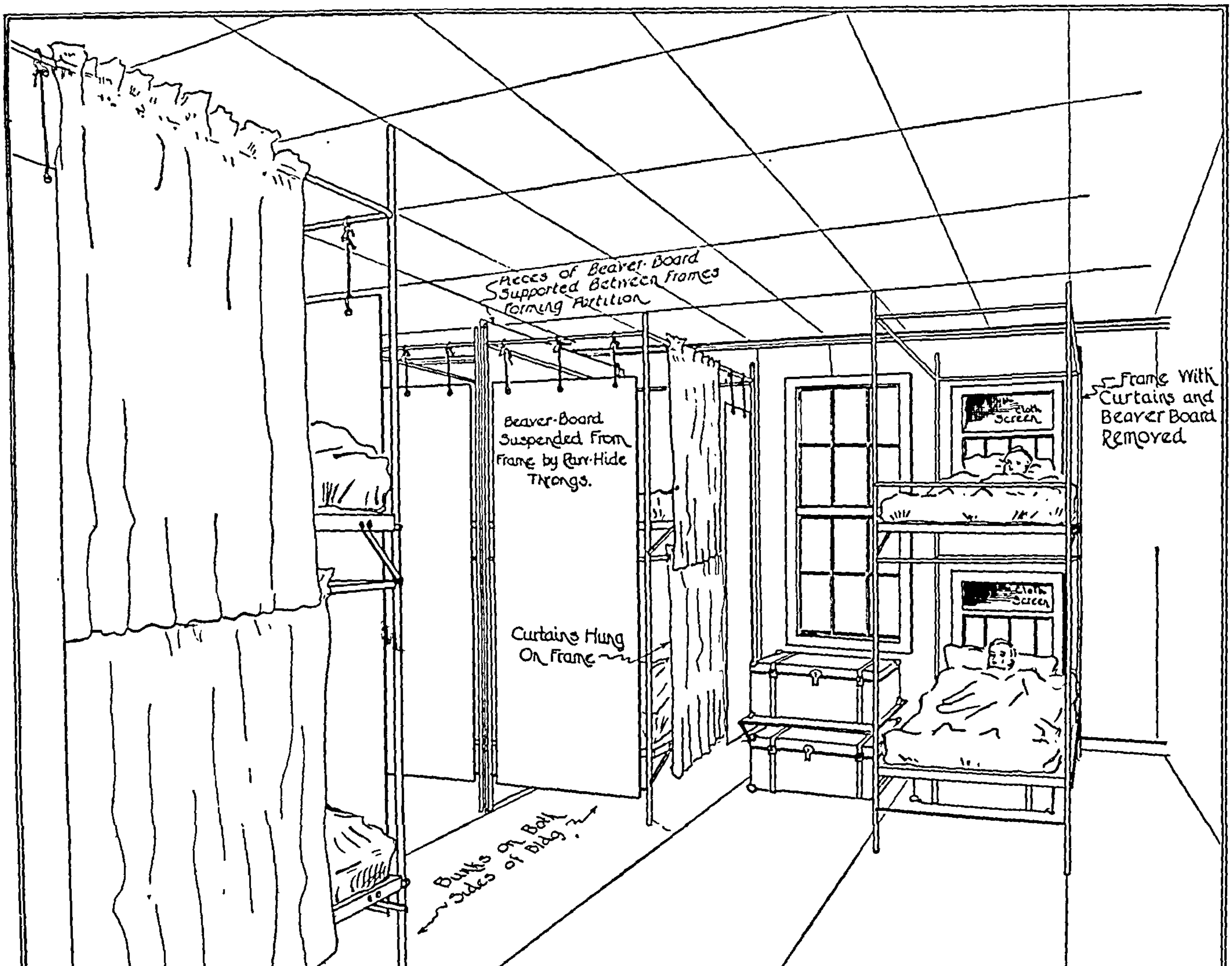
(*d*) In case an infectious disease arises, only three contacts need to be isolated.

(*e*) In warm weather the partitions at the foot of the beds may be removed, if this seems desirable, without nullifying the objects of the design, and the windows may be opened.

(*f*) All partitions, being made of beaver board, can readily be removed or replaced, and may be painted or burned in case of vermin.

(*g*) All beds can be readily removed and the entire room scrubbed or painted.

(*h*) This room may or may not be heated by steam pipes running low along the walls.


Pieces of Beaver-Board Supported Between Frames forming Partition
Beaver-Board Suspended From Frame by Raw-Hide Thongs.
Curtains Hung On Frame
Bunks on Both Sides of Bldg.
Frame With Curtains and Beaver Board Removed
Cloth Screen
Cloth Screen

Arrangement of bunks for sanitary purposes.

(*i*) The curtains can be made of any cheap washable material and are individual for each sleeper.

The special features of the barrack necessitated by the dormitory features are:

(*a*) A special dressing room for each dormitory, which may be heated, and attached to the dormitory so that the men do not have to go outdoors to get to the baths and latrines. This is an especially bad feature of present cantonment construction.

(*b*) A recreation room ample and separated from the dormitories.

TONSILLECTOMY IN MYOSITIS AND ARTHRITIS

RESULTS IN TWO HUNDRED CONSECUTIVE CASES *

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AND
H. R. LYONS, M.D.
ROCHESTER, MINN.

That the tonsil is a focus of infection in cases of myositis and arthritis is common knowledge and will not be discussed in this report, which deals with the results of operation in a series of consecutive cases of myositis and arthritis.

As a preliminary to the selection of the 200 cases of the series, letters of inquiry were sent to 400 patients who had been operated on consecutively. The answers from the first 200 were accepted as sufficient data for the basis of our report.

The data recorded were facts concerning sex, age, first attack of myositis or arthritis, number of attacks, joints involved, presence of pyorrhea alveolaris or tooth abscess, history of tonsillitis, history of previous tonsil operations, and the present condition, whether ambulatory, incapacited or invalided.

In recording the improvement in the long standing cases we fully appreciate the importance of the time element, and also the fact that in many other cases patients may improve without treatment. The series includes, however, all types of cases, from the very mild myositis to the very severe deforming arthritis that is strictly of an infectious origin. The gonorrheal and syphilitic types, etc., are excluded.

DISCUSSION OF TWO HUNDRED CONSECUTIVE CASES

All of the 200 patients in the series were operated on between July 1, 1917, and Dec. 31, 1917. Letters of inquiry with regard to the final results were sent in November, 1918; thus ample time was given for improvement, although undoubtedly in a few cases there would have been further improvement had more time elapsed. Our percentages are, therefore, from this standpoint alone, too low rather than too high.

Eighty-seven of the patients were aged 30 years or less, and 113 were aged 31 years or more. The average age was 30 years. Seventy-one (81.6 per cent.) of the first group of eighty-seven patients were better after tonsillectomy; the others were not improved. Eighty-eight (77.7 per cent.) of the second group of 113 patients were better after tonsillectomy; the others were not improved. These percentages indicate that as the condition becomes more chronic less benefit is derived from tonsillectomy, although in the long standing cases improvement is found almost as often as in the recent or subacute cases.

The average age of the patients who reported their condition worse was 40 years. The duration of the myositis or arthritis in all the cases varied from a few days to thirty-nine years. The average duration of the myositis or arthritis in patients improved by tonsillectomy was eight years.

The ten patients in whom the condition was chronic and who were invalids at the time of operation report results as follows: Two patients who were confined to bed were the same after tonsillectomy. Four walked but were incapacited for work; ultimately two of these were better. Two were wheel-chair cases; one was better and one the same. Two had had to use crutches; one was better and one was not improved. Thus four of the ten patients (40 per cent.) reported improvement.

In the cases of arthritis, the joints involved in the order of frequency were the knees, the hands, the ankles and the hips. In the cases of myositis, the shoulders and arms, the back, the lower extremities and the neck were involved.

In the cases of pyorrhea alveolaris or tooth abscess, demonstrated both clinically and by the roentgen ray, 81.4 per cent. of the patients were better after tonsillectomy; 36 per cent. of these had dental work done in addition to tonsillectomy, and 45.4 per cent. had no dental work done; 18.6 per cent. of the patients were the same after tonsillectomy; 12 per cent. of these had dental work done in addition to tonsillectomy, and 6.6 per cent. had no dental work done.

PERIOD OF ONSET OF DISEASE

Years (Inclusive)	No.	Per Cent.
Between 1915 and 1917	79	49.6
Between 1910 and 1914	33	20.9
Between 1900 and 1909	37	23.2
Between 1890 and 1899	7	4.4
Between 1879 and 1899	3	1.8

It will be noted that in a considerable percentage of the cases in which a diagnosis of pyorrhea alveolaris, dental abscess or caries was established, the dental sepsis had been disregarded, and it is fair to assume that even a larger percentage of the patients had a possible focus of infection in their teeth and needed dental care. Too much emphasis cannot be placed on the importance of the care of the teeth as an aid to the cure in these cases. When patients who are examined by us present definite, marked dental sepsis and septic tonsils, we insist on having the teeth properly cared for before tonsillectomy is done.

The size of a tonsil is of variable importance in advising tonsillectomy. In the Mayo Clinic, reports and advice regarding tonsils are based on three main factors: (1) the result of properly expressing tonsillar crypts with a tonsil explorer; (2) the tonsil history, and (3) the patient's symptoms. The size of a tonsil is estimated on a scale of 1 to 4; 1 represents the submerged tonsil, 2 the tonsil that is just visible, 3 the tonsil presenting in front of the tonsillar pillars, and 4 the very large obstructing and pendulous tonsil. In the present series the average size was 2, those just visible in the cursory examination of the throat. This is the type that many physicians, specialists as well as internists, look on as harmless, and accordingly advise against a tonsillectomy. As a matter of fact, the importance of the tonsil as a focus of infection does not increase with its size, nor has it any relation to it. In our cases the tonsillar crypts were carefully examined and an exact history taken both of the throat and of the general complaint before advice was given as to the probability of the tonsils being the focus of infection. A conservative position was taken in every case. In 6 per cent. of the 200 cases a tonsillectomy had been attempted elsewhere, and in each case the myositis or arthritis continued as before, thus showing the value of a clean tonsillectomy in all cases.

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* From the Section of Otology, Laryngology and Rhinology, Mayo Clinic.

One hundred and fifty-four of the 200 patients were unable to work, or at least were unable to work steadily at the time of their examination. After tonsillectomy, 118 (77 per cent.) of these were able to work steadily; thirty-five (22 per cent.) were the same postoperatively. Thirty-five patients of the series needed the help of crutches or a cane. Twenty-five (71 per cent.) of these were enabled by the tonsillectomy to discard any help; ten (29 per cent.) were not benefited.

Opinions have varied with regard to the end-result in cases in which an immediate reaction was experienced after a tonsillectomy because of an acute attack of myositis or arthritis. Twenty-four (12 per cent.) of the patients reported an acute exacerbation of their condition immediately after the tonsillectomy. Nineteen (79.1 per cent.) of these reported ultimate improvement; five were not improved. It is also noteworthy that of 159 patients who reported that they were better, eighty-seven (55.3 per cent.) reported that their improvement started immediately after the tonsillectomy; the average length of time before improvement began was eight weeks.

Ninety-two of the 200 patients had enlarged joints. Of these, fifty (54.3 per cent.) reported that their joints had returned to normal size after tonsillectomy, and 45.7 per cent. reported that their joints had remained the same. However, in a number of cases of long standing chronic arthritis with enlargement of the joints, the immediate results of a tonsillectomy have been surprisingly good. In many instances of long standing painful and enlarged joints, the joints have immediately decreased in size and become useful. We have had a number of patients who went to the hospital for operation using crutches or a cane, who were able to discard them thirty-six hours later.

Thirty-three of the patients had had treatment other than tonsillectomy, for example, massage, baths, electric vibration, phylacogens and osteopathy.

In the entire series only 57.7 per cent. of the patients gave a history of tonsillitis. This is of interest in view of the fact that many practitioners believe tonsillectomy should be advised only when there is a history of tonsillitis or quinsy. In addition to the patients who did not give a history of tonsillitis are those who did not have a tonsillitis followed by an acute arthritic attack. It is obvious, therefore, that a tonsil need not be periodically inflamed in order to become a focus of infection, and it is even less necessary that an attack of tonsillitis should immediately precede the acute attack of arthritis.

The foregoing data constitute the general findings in the patients who present themselves for examination. The cases vary from the very mild up through each succeeding grade of severity to chronic arthritis and invalidism. The average of the sum total, therefore, represents the results obtained in all cases.

TWENTY-EIGHT SELECTED CASES

A special study was made of twenty-eight selected patients who had a most severe form of chronic infective arthritis with marked involvement of the joints. In some of these, definite roentgen-ray findings were noted. The postoperative time element is identical with those of the other cases in the series. The average age of the patients was 37 years; the duration of arthritis was from ten months to eight years; the average duration of arthritis in those who were improved was eight years; the duration in those who remained unimproved was from eight months to twelve years. Sixteen (56.1 per cent.) reported their condition better, and twelve (42.9 per cent.) were not improved. Seventeen of the patients were aged 31 years or more, of whom nine (53 per cent.) were better postoperatively, and eight (46.3 per cent.) were not improved. Eleven were aged 30 years or younger, of whom eight (72.7 per cent.) were better after operation, and four (36.3 per cent.) were not benefited. The size of the tonsil was 2 in all but six of the cases.

It may again be noted that most of the patients in the series of 200 cases who did not obtain relief from tonsillectomy fall into the group of the long standing, chronic cases, and that in cases in which the arthritis was not improved after operation, six times as many of the patients were of 31 years or more as were of 30 years or less. Even in the group of the severe type of arthritis, 53 per cent. were of the older patients. Seventy-two and seven-tenths per cent. of the younger patients in the group were markedly improved.

Twenty-one of the twenty-eight patients were disabled or unable to work at the time of examination. Eleven (52.3 per cent.) of these reported that their condition was improved and that they were able to work; the other 47.7 per cent. were still incapacitated. Five (31.2 per cent.) of the eleven who were improved reported that their improvement started immediately following the tonsillectomy. The average length of time before improvement was noticed was three months. In order to determine more exactly the results obtained in these twenty-eight cases, they were classified into four groups:

Group 1. The mild type of cases in which there was a history of repeated joint enlargement that receded, and the patient reported for examination in the interval stage.

Group 2. Cases in which there was definite joint enlargement with the accompanying symptoms and signs, but without joint changes noted by the roentgen ray.

Group 3. Cases in which there was marked joint involvement of a chronic nature, and slight roentgen-ray findings, such as fibrosis of the joint capsule, or a beginning thickening of the bone on the articular surfaces.

Group 4. Cases in which there was not only marked and long standing joint enlargement but also in which the roentgen ray showed definite signs, such as marked increase in bone on the articular surfaces, typical spinelike processes on the vertebral articular surfaces, or the destruction or osteoporosis of the articular borders.

Twenty-two of the twenty-eight patients had enlarged joints before tonsillectomy was performed. Of this number, six (27.2 per cent.) reported that their joints had returned to normal size; the others reported no change. Four of these cases fall into Group 1 and two into Group 2. It is a striking fact that in the patients who had been practically invalids with chronic arthritis, and in whom no changes were found by the roentgen ray, the joints returned to normal size and function in a relatively short time, and conversely that the patients in Groups 3 and 4 had no beneficial change in the joint involvement. This distinction of type is paramount when the end-results are considered in detail. It should be remembered that it is the patients classified in the first two groups who are given a practically hopeless prognosis and little or no chance for improvement by most physicians.

Six (21.4 per cent.) of the twenty-eight patients reported an acute exacerbation of the joint signs and symptoms immediately following tonsillectomy. Three of these eventually reported improvement; the others were not improved. An acute flare-up or exacerbation postoperatively may be hailed as a sign that the tonsils were the active focus of infection. The end-results in these severe types of arthritis may not be entirely encouraging to the patient. Eleven (39 per cent.) had some form of dental work done in addition to their tonsillectomy. Nine (81.1 per cent.) reported their condition better; two were not improved. It may be assumed that many of these patients retain teeth that are acting as a focus of infection, and that a higher percentage of improvement would undoubtedly be reported if the roentgen ray were employed, and a careful examination were made in every case, so that all dental sepsis might be removed promptly and thoroughly.

SUMMARY

1. It is justifiable to advise a tonsillectomy in every frank case of myositis or arthritis.

2. A marked improvement may be assured from tonsillectomy alone in 79 per cent. of all cases.

3. It is necessary to remove all possibility of dental sepsis; by so doing a larger percentage of patients will be improved.

4. The duration of the myositis or arthritis is a factor in the ultimate results, although benefit and even complete cure is obtained in some long standing, chronic cases.

5. Forty per cent. of the patients with chronic myositis or arthritis who are invalids will respond favorably to tonsillectomy.

6. The size of a tonsil has no bearing on its possibility as a focus of infection. A careful expression of the tonsillar crypts and a history of throat trouble associated or not associated with the myositis or arthritis is essential in the diagnosis.

7. An absence of a history of diseased tonsil in no way eliminates the organ as a focus of infection.

8. A clean tonsillectomy, with the removal of the plica tonsillaris, is necessary in every case.

Report of Commission on Mental Diseases.—The Second Annual Report of the Massachusetts Commission on Mental Diseases, for the year 1917, shows that the total number of persons cared for by the eighteen or more public institutions of the state, the almshouses and private institutions, was 19,000. Of this number 80 per cent. were insane, 15 per cent. feebleminded, and 4 per cent. epileptic. The work in the state hospitals was somewhat handicapped during the year by the absence of many physicians in military service. The Massachusetts Committee for War Work in Neurology and Psychiatry was organized during the year, and cooperated with the war work committee of the National Committee for Mental Hygiene. A uniform curriculum in all the training schools for nurses was instituted, and the committee adopted a new form of reporting statistics recommended by the American Medico-Psychological Association.

INJECTION OF HOT SODIUM CHLORID SOLUTION IN TREATMENT OF VARICOSE VEINS

F. W. KAPPELMAN, M.D.
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I realize fully the responsibility of applying a new surgical method to the treatment of a given malady, particularly when such a method is entirely unsupported by any authority in medical history, so far as I have been able to learn; and also in view of the fact that I received no encouragement at the outset from those of the medical profession whom I deemed some of the best authorities on surgery in the city, and to whom I appealed for suggestions. Their answers were like this: "Your patient will possibly wake up dead with a lung embolism," or "You will most likely get a muscle sloughing," or "The solution will cool too much in passing through the tube to accomplish the desired result." Another looked at me and asked where I got the idea. When I told him it was my own, he turned on his heel, and with a look of dismay and a wave of his hand said, "You can't try it on me." A pathologist stated as a fact that the veins would regenerate. Such consolation reminds me of that part of the comic sheet in one of our daily papers entitled, "It's a great life if you don't weaken." All this, while not encouraging, was very helpful. The submission of these possible objectionable features was valuable, in that it gave me food for thought, and better enabled me to fortify myself in my technic against serious consequences.

After having completed my technic theoretically, I was confident that the operation would prove to be far superior to the old methods, if given a fair trial. That it is superior, I am now convinced beyond a doubt. While my experience with this operation is limited to seven cases, the results have been agreeably satisfactory.

The object of the operation is to obliterate the lumen of the vessels in situ by destroying the intima and causing complete atresia of the vein. Of course, there were problems to be solved, the most important of which were: (1) the minimum temperature of the solution which would produce the desired results; (2) how to keep the blood out of the vessels while the solution is being introduced, and (3) how to prevent embolism. From the first, each of these problems has been met successfully in the administration of my technic, with the exception of the temperature of the solution. This phase I had to experiment with on the patient because there was no other way in which it could be ascertained. Therefore, eager to have it a success, I used the solution at boiling point in my first operation. This caused a complete destruction not only of the intima, media and adventitia, but also of all the surrounding tissue and skin as well. Thanks to my foresight in selecting my case, a man who was suffering from only a small tuft of varicosities on the calf, this sloughing, although in itself not a pleasant experience, caused no ill effects. While this result was anything but ideal, it was gratifying because it disproved the assertion that I could not introduce the solution into the vein hot enough to accomplish its purpose. In my next two cases I used the solution at 185 F. In both instances the results were good, with the exception of sloughing at a small point in each, which was evidence that the solution was still too hot. Since that time I have used it at 165 F. with a perfect result in each case.

TECHNIC

The necessary equipment for the operation besides the usual knife, hemostats, stripper, etc., are: (1) an irrigator equipped with a 6 foot rubber tube having a small cannula in the end; (2) thermometer which will register boiling point, passed through a cork to suspend in the solution; (3) two sterile race horse bandages, and (4) a tourniquet.

The patient is prepared in the usual way and anesthetized. Assuming that it is the internal saphenous which is involved, it is located near the saphenous opening of the fascia lata and is divided between two forceps. A transfixed ligature is applied to the proximal end, which is allowed to retract. The vein is then stripped to a point even with the upper margin of the internal condyle of the femur. A small longitudinal incision is made over the eye of the stripper, which is forced through the opening. The vein is then grasped distal to the stripper, which is then withdrawn. The vein is pulled through the lower incision and cut off about 2 inches from the wound. The upper wound is then sutured and a dry dressing applied, held by adhesive strips.

The leg is then elevated. The blood, usually a small amount in the superficial veins, is expelled through the opening at the knee, and the veins are collapsed by means of the race horse bandage, which is wound very tightly around the leg from the ankle to just below the knee. Now a tourniquet is applied to the thigh to shut off circulation entirely. This leaves the deep vessels, both veins and arteries, filled, which prevents the solution from passing into and doing injury to the deep veins through the collaterals. The leg is now lowered to the table.

The 3 per cent. solution of sodium chlorid, now in the irrigator, which is elevated about 3 feet above the field of operation, is allowed to run into a receptacle until the tube and cannula are hot. It is then shut off and the cannula is introduced into the vein and is held in position by catgut tied around the vein and the cannula. This prevents the solution from escaping. At this point it is necessary for the assistant to exert pressure with the thumb over the external saphenous in the popliteal space while the solution is under pressure. This prevents the solution from passing through the communicating veins and the external saphenous into the popliteal vein. The solution is allowed to flow and the bandage is slowly unwound from the knee to the ankle. This permits the solution to flow into the empty vein from above, while the bandage prevents the blood from flowing in from below. As soon as the bandage is entirely removed, the flow of the solution is shut off and the cannula is removed. The bandage is then again applied as before, forcing the solution out and collapsing the veins. The tourniquet is removed. The vein is pulled taut and ligated as near the wound as possible, cut and allowed to retract. The wound is sutured, one stitch usually being sufficient, and a small dry dressing applied to the wound by means of adhesive strips.

Cases in which the external saphenous is affected require no stripping; in other respects the procedure is identical. When both saphenous veins are involved, the internal saphenous should be treated first.

ADVANTAGES OF THE METHOD

The points in favor of this operation over all other methods are:

1. The operation requires only a few minutes; hence a short anesthesia.
2. It is less tedious.
3. It is as easily accomplished in the presence of a large amount of panniculus adiposus as in its absence.
4. It involves a minimum amount of cutting.
5. It is cosmetically ideal.
6. The nerves are left intact; there is no dead sensation.
7. The lymphatics are preserved.
8. There is absolutely no pain after the operation.
9. The length of stay in the hospital is reduced to a few days.

Since writing this paper I have used this method exclusively. I have reduced the temperautre to 160 F. with equally as good results.

4714 Pabst Avenue.

CAMPHORATED OIL POISONING WITH NO MORTALITY

REPORT OF TWENTY CASES

R. W. BENZ, M.D.
HONOLULU, H. I.

Feb. 9, 1919, I received a message from a local children's institution that one of the inmates was having a "fit." Arriving there twenty minutes later, I found that twenty children were having convulsions. On inquiry I found that the children had been given from 1 to 1½ tablespoonfuls of medicine, presumably castor oil. The dosage had varied according to the ages of the children, who were from 4 to 10 years of age. The medicine was given at 6:30 a. m., and the first child to be taken ill presented his initial symptoms at 7:15 a. m. The children were sprawled all over the dormitory presenting all kinds of symptoms, from an expression of the face indicating nausea to convulsions. The first thing that immediately impressed one on entering the room was the odor of camphor.

It was then discovered that the children had been given camphorated oil (*linimentum camphorae*) instead of castor oil.

SYMPTOMS, TREATMENT AND RESULT

On examination of the most severe case the following symptoms were predominant, all the rest presenting the same symptoms to a minor degree:

Examination.—The child was unconscious and rigid, with the head thrown backward. The color was good except for intense lividity of the lips, which were blue black. The body was cold to the touch. No perspiration was apparent. The pulse was greatly accelerated (120), but showed good volume. Respirations were slow and shallow. No actual count was taken. The eyes were fixed staring straight ahead. The pupils were equally dilated. An odor of camphor was noticeable on the breath. The jaws were locked, and there was a tetanic contraction of the masseters. There was cervical rigidity. The arms showed tonic contraction. The legs were extended. The twitching of oral and buccal muscles was noticeable. The reflexes were not noted.

Treatment.—The milder cases were treated with mustard water, which caused emesis within a few minutes, and within twenty minutes the children were apparently well.

The children more severely affected were immersed in hot mustard water, and when they became relaxed, which occurred within a few minutes, they were forcibly given mustard water. A cupful in practically all cases was sufficient to cause emesis, aided with upward pressure on the abdomen. These patients were well within three or four hours.

In one very severe case there were alarming symptoms for twenty hours, during which time the child was comatose. This child was well in twenty-nine hours.

COMMENT AND CONCLUSION

There does not seem to be any mortality associated with a dose of camphorated oil up to 1½ tablespoonfuls, although in some cases the symptoms are alarming. The treatment seems to be the hasty removal of the stomach contents by means of an emetic, following which the patients rapidly recover.

LIMITATION OF ROENTGENOTHERAPY OF SURFACE EPITHELIOMAS *

WILLIAM THALHIMER, M.D.
MILWAUKEE

In this case, an epithelioma of the skin of the dorsum of the hand was treated by the roentgen ray, and after a resection of a resulting ulcer, a local cure occurred. Subsequently to this, a large tumor appeared in the axilla which proved to be a metastatic squamous cell carcinoma. It is evident that in cases of this nature, if roentgenotherapy is resorted to, it should not be confined to the superficial tumor, but the regional lymph nodes along the path of lymphatic drainage also should be thoroughly treated. Only under these circumstances is roentgenotherapy justifiable. This rule is recognized by roentgenotherapeutists in treatment of epithelioma of the lip, in which they especially caution that the neighboring lymph nodes should also be treated. It would seem that this rule is not so well appreciated in the treatment of epitheliomas of the skin of the extremities. The case here reported illustrates this point and indicates the thoroughness with which roentgenotherapy should be applied when it is used.

In spite of the remarkable advances that have been made recently in roentgenotherapy, it is still a debatable question whether local, operable, malignant disease should be treated by the roentgen ray or by excision. When the tumor is situated on the face, cosmetic results at times may indicate roentgenotherapy, to avoid a scar. Undoubtedly, a wider application of roentgenotherapy is justifiable at this stage of its development, for it is important to determine, without too much risk to the patient, the efficacy of the recently much improved roentgen-ray methods. Since it is certain that these improvements have given a tremendous impetus to the roentgenotherapy of malignant conditions, it is hoped that the report of this case, showing the limitations of purely local treatment, will stimulate roentgen-ray workers to extend their therapy widely enough to include the lymphatic drainage and regional lymph nodes in all cases.

REPORT OF CASE

G. M., man, aged 56, noticed one year previously a small, wartlike tumor on the dorsum of his right hand, half way between the thumb and the forefinger. This was very small at first but soon grew as large as a cherry. This tumor was then treated by the patient's physician for three months with roentgen rays. The tumor disappeared in this time and was replaced by an open ulcer, 2 cm. in width, which refused to heal. A microscopic examination was not made of this. This ulcer was then widely excised, and the skin defect successfully covered by a skin graft. Six months after the first appearance of the tumor, which was about two months after the excision of the ulcer, a small, painful nodule appeared in the axilla. About two months after this, the patient consulted Dr. A. J. Patek, who kindly referred him to me. At this time, Feb. 23, 1919, the right axilla was filled by a mass about 4 by 5 cm. in size. This was tender, and the skin was red and warm over its most prominent part. Beneath this there was a slight fluctuation and there could be felt in the depths a rounded, tense area about 2 cm. in diameter, which also fluctuated. The process appeared to be inflammatory, but because of the previous history, metastatic carcinoma was thought of. The mass was incised by me the same day, and cloudy, serous fluid, containing fragments of degenerated tissue escaped. The lining of the resulting cavity was firm and irregular, and a projecting piece of tissue was removed, which on microscopic examination proved to be squamous cell carcinoma. One week later, I cleaned out the axilla as thoroughly as possible. The tumor was densely adherent to the axillary vein and was dissected away with difficulty. The wound healed by primary union, and the axilla is now being treated by roentgen ray in the hope of preventing a recurrence.

It is interesting to note that the epitrochlear lymph node is not enlarged and therefore is apparently not involved. It is thought that perhaps because of the situation of the tumor the epitrochlear lymph node was not in the path of lymphatic drainage.

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* From the Laboratory of Pathology, Columbia Hospital.

STUDIES ON MALARIA CONTROL

II. THE TREATMENT OF MALARIA, WITH THE SPECIAL OBJECT OF DISINFECTING INFECTED PERSONS, ADOPTED AFTER WIDE EXPERIENCE IN MALARIA CONTROL BY TREATING MALARIA CARRIERS IN THE MISSISSIPPI DELTA.*

C. C. BASS, M.D.
NEW ORLEANS

My object is to call attention to the treatment of malaria which has been adopted after a study of different methods of treatment in more than 25,000 malaria-infected persons in Bolivar and Sunflower counties in Mississippi during 1916, 1917 and 1918. Full reports of these experiments in malaria control will be published in due course, but it is hoped that this paper may be read and the treatment advised may be adopted by a larger number of physicians than would result from the extensive report alone.

No attempt will be made here to present the data and observations supporting the method of treatment adopted. Suffice it to say that the treatment here advised has been adopted after three years' observations, in an attempt to learn the most effectual and practical treatment for disinfecting malaria-infected persons.

The treatment for adults is 10 grains of quinin sulphate every night before retiring for a period of eight weeks. For children the dose that gives the same results as 10 grains in adults is: under 1 year, ½ grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 4 grains; 8, 9 and 10 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains.

The 6, 8 and 10 grain doses are best administered in the form of two tablets (or if preferred, capsules) containing 3, 4 or 5 grains each. The smaller doses are best administered in aromatic syrup of yerba santa (syrupus eriodictyi aromaticus, N. F.), so prepared that one teaspoonful contains the required dose. The eight weeks' treatment should be prescribed at one time, and the patient should be advised and impressed that he should take the full treatment without missing doses; otherwise a relapse is likely to occur. A physician who cannot impress his patient to this effect has not his patient's full confidence.

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* From the Department of Experimental Medicine, Tulane University of Louisiana School of Medicine.

* This is one of a series of papers to be published, based largely or entirely on malaria control work conducted jointly by the International Health Board and the Mississippi State Board of Health.

Persons who have acute attacks of malaria should be given one dose of 10 grains (or a proportionate dose for children) three times a day for a period of three or four days, which always relieves the acute symptoms, and then the eight weeks' treatment finally to eliminate the infection.

COMMENT

Treatment of malaria by different physicians varies greatly. In most instances the patient is not disinfected by the treatment but remains a malaria carrier likely to relapse at any time and also likely to be a source of infection to others. Few of the patients treated by physicians in general are actually disinfected, though it is possible and practical to disinfect all. There are no exceptions, barring patients that are moribund. If all physicians succeeded in disinfecting their malaria patients, it would contribute largely to the reduction of the prevalence of the disease in this country.

The treatment described above will disinfect more than 90 per cent. of cases. It would take more than three months' treatment to disinfect 100 per cent. Some persons require much longer treatment than others to kill all their malaria parasites. Whenever there is reason to suppose that a given patient is such an exceptional person, he should be given longer than eight weeks' treatment, without waiting for a relapse to make this necessary. The history frequently indicates those who are especially difficult to disinfect of malaria. In case of a relapse, the full treatment must be repeated and continued longer than eight weeks. In the event of a relapse, necessitating repeating the treatment, no credit can be allowed for any previous treatment.

Quinin (and other cinchona alkaloids) is the only drug known that cures malaria. The sulphate is as effective as any other salt, and more effective than some. The greater solubility of some other salts is no advantage in the treatment of malaria, but on the contrary may be a disadvantage.

Administration of quinin by mouth is the only method to be considered in the treatment of malaria except in rare instances of pernicious malaria, when one or more doses given intravenously may save life. The dose for this purpose should never exceed 10 grains. The bimuriate (quininae dihydrochloricum, U. S. P.) is a good salt for this purpose. Administration by mouth should be started just as soon as practical in such cases.

Physicians who give quinin hypodermically or by deep injection or who contemplate doing so should take a few doses themselves. Such experience will usually quickly quiet one's enthusiasm for the method. I admit that there may be rare instances in which the administration of a dose or two of quinin in this way may be indicated, but it certainly should never be allowed to take the place of administration by mouth, the only practical method of disinfecting infected persons.

Administration of quinin every day disinfects a considerably larger proportion of cases in a given length of time than intermittent treatment with quinin on one or two days of each week. This is contrary to views held by some students of malaria, including my own self at one time, but it is a fact, nevertheless.

Special Article

HOSPITAL SERVICE IN RURAL COMMUNITIES

A PRELIMINARY REPORT

Prepared by Ernst C. Meyer, Director of the Department of Surveys and Exhibits of the Rockefeller Foundation International Health Board

New York

(Continued from page 1136)

PART I. EXTENT OF SICKNESS AND OF DISABILITY DUE TO SICKNESS

Hospital service is obviously closely related to sickness. Its need is reflected in a large way by the number of deaths and number of cases of sickness in a community. Inquiry into the reason for death may throw light on the adequacy of medical care which preceded it. Whether those who survived sickness had adequate care can be determined only by careful study of the treatment received and of the conditions surrounding convalescence.

Information on the extent of sickness and on its care is largely lacking. In 1890, the United States Bureau of the Census gave some attention to morbidity statistics. A considerable area and population were covered. Results tended to show that sickness is more prevalent in country districts than in the city. The census statistics, however, are admittedly incomplete. Table 1 summarizes the results of the federal morbidity census.

TABLE 1.—SUMMARY OF FEDERAL MORBIDITY CENSUS

States	Population	Sick and Disabled	Rate per Thous nd
Northeastern states*	12,312.024	207,302	16.84
Southern states†	4,936,515	91,578	18.55
Cities‡	6,330,441	63,414	10.02

* Included Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey and Delaware.

† Included Alabama, Tennessee and Virginia.

‡ Included New York, Chicago, Philadelphia, Brooklyn, St. Louis, Boston, Baltimore, Cincinnati and Washington.

More recent and highly suggestive material was collected by the Metropolitan Life Insurance Company of New York City, which made surveys covering more than 13,000 cases of sickness scattered about in a total population of 637,038 people, a considerable percentage of whom resided in urban communities. The population covered by these surveys consisted of policy holders belonging to "representative groups of wage earners." The information was secured by agents of the company in the course of their regular business in making collections. It was thought that the enumerators of the company, because of personal knowledge of the circumstances in the family life of the groups under their weekly supervision, had a peculiar advantage in obtaining reliable information. "The resulting statistics," a report of the company states, "are believed to be uniquely valuable in that they tend to approach the truth more nearly than do records of sickness inquiry characterized by the hesitancy or reticence of persons to impart more or less confidential information to an enumerator whom they do not know."

Both the survey above referred to and the State Charities Aid Association survey, details concerning which are presented below, define sickness as "an illness so serious that it either necessitates or should have necessitated the patient's going to bed or securing medical aid." Slight illnesses were not taken into account. The Metropolitan Life Insurance Company further distinguished between people who were ill and able to work; and people who were ill and unable to work. The first class were described as merely "sick," and the second as "disabled."

The Metropolitan Life Insurance Company located 13,312 sick individuals among a population of 637,038. This produced a rate of 20.8 per thousand. Of the 13,312 sick, 12,114 were reported disabled. The disability rate thus was 19.1 per thousand; the disability rate for males over 15 years of age was 22.7, and for females of the same age group, 24.1 per thousand. Details are presented in Tables 2 and 3.[3]

A further survey, which went beyond that of the Metropolitan Life Insurance Company in that it inquired with much care into the character of medical aid received, and its adequacy or inadequacy, was conducted by the State Charities Aid Association of New York State in Dutchess County, N. Y., in 1913, and covered sickness which occurred during the sixteen preceding months. A total of 1,600 cases of sickness was discovered in connection with intensive surveys among an aggregate population of about 11,800. It was believed that this population might be regarded as typical of the total population of Dutchess County, which includes 38,500 urban and 49,725 rural residents.

The findings of the State Charities Aid Association survey confirm the results of the surveys of the Metropolitan Life Insurance Company, and suggest the approximate accuracy of both surveys as measures of community sickness.

TABLE 2.—RELATION OF SICK AND DISABLED TO TOTAL NUMBER OF PERSONS INVESTIGATED, TOGETHER WITH THE DISABILITY RATES PER THOUSAND PERSONS INVESTIGATED, CLASSIFIED BY SEX

Area	Persons Investigated*	Persons Sick		Persons Disabled		Disability Rate per 1,000 Investigated 15 and Over	
		No.	Rate	No.	Rate	Male	Female
Boston	97,259	1,902	19.6	1,747	18.0	21.6	21.8
Rochester	34,490	798	23.1	661	19.1	23.2	25.7
Chelsea (N. Y. C.)	24,043	356	14.8	331	13.8	17.6	14.7
Kansas City, Mo.	34,267	862	25.2	816	23.8	23.5	26.1
North Carolina	66,007	1,881	28.5	1,512	22.9	25.1	35.3
Trenton	6,971	180	25.8	139	20.0	24.8	23.1
Pittsburgh†	115,618‡	1,869	16.2	1,791	15.5	20.2	18.3
West Virginia†	41,246	1,363	33.0	1,284	31.2	30.9	40.4
Cities in Pennsylvania and West Virginia	374,001	7,333	19.6	6,908	18.5	23.3	22.5
Total	637,038§	13,312§	20.8	12,114§	19.1	22.7‖	24.1‖

* This column represents the total number of inhabitants concerning whom information was collected in the surveys.

† The figures for Pittsburgh and West Virginia are also included with the figures covering cities in Pennsylvania and West Virginia, given elsewhere in this table.

‡ Statistical results of this sickness survey limited to white persons only.

§ Figures for Pittsburgh and West Virginia are not included, as they are contained in the total given for cities in Pennsylvania and West Virginia.

‖ Arithmetical mean for the cities indicated.

A survey of unusual interest and importance was conducted by the Department of Health of the City of New York in 1917. This survey had been preceded by two more limited illness censuses taken in an experimental health district[4] in August, 1915,[5] and in February, 1916.[6] The total number of persons canvassed in 1917 was 56,676, and the total number of persons reported as ill was 1,405. This shows an illness rate of 24.8 per thousand. This rate, it will be noticed, is somewhat higher than that developed by the surveys already referred to. "Every case of illness, no matter how trivial, was classed among the ill." A further explanation of the difference in rates is found in the fact that the New York City census was taken in the month of February when, from experience, the morbidity is found to be highest and was, moreover, taken in two of the heaviest negro districts of the city, where sickness was known to be more general than elsewhere. These districts had been selected because of the great need of intensive health work among the city's colored population. Patrolmen were used in canvassing one district on the west side of the city, and nurses and medical inspectors in the second district, located in Harlem. The census was completed in one day, Feb. 19, 1917. Patrolmen canvassed every family; the nurses and medical inspectors, because of the large area covered in Harlem, did not canvass every family. Those canvassed were, however, considered to be representative of the entire group. Considerable publicity had been given to the census, and details were carefully planned.

TABLE 3.—SICKNESS AND DISABILITY RATES PER THOUSAND POPULATION AS DEVELOPED BY SURVEYS INCLUDING 13,312 CASES OF SICKNESS IN THE AREAS INDICATED

Area	Sickness						Disability					
	Both Sexes		Male		Female		Both Sexes		Male		Female	
	All Ages	Over 15	All Ages	Over 15	All Ages	Over 15	All Ages	Over 15	All Ages	Over 15	All Ages	Over 15
Rochester	23.1	29.3	21.4	27.3	24.8	31.2	19.2	24.5	17.8	23.2	20.4	25.7
Boston	19.6	24.0	19.9	24.3	19.5	23.8	18.0	21.7	18.1	21.6	18.1	21.8
Chelsea (N. Y. C.)	14.8	....	....	....	....	....	13.8*	16.1	14.9†	17.6	12.8†	14.7
Kansas City, Mo.	25.0	....	....	....	....	....	23.9	22.5	23.7	21.7	24.1	23.2
Pittsburgh	16.2	20.2	16.8	21.2	15.5	19.3	15.5	19.2	16.1	20.2	14.9	18.3
N. Carolina	28.6	37.1	25.1	31.4	32.6	42.8	22.6	29.9	19.9	25.4	25.7	34.0
Pa. and W. Va.	19.4	24.3	19.7	24.9	19.0	23.7	18.2	22.6	18.6	23.1	17.9	22.2
Trenton	25.8	31.6	25.5	33.0	26.1	30.3	19.9	23.9	19.5	24.8	20.4	23.1

* Black and white races. The rate among the white was 13.6, among the colored, 15.4.

† Black and white races.

Of the 1,405 cases of illness located, 925, or 66 per cent., were reported as "incapacitated." The disability rate on the basis of population covered was 16.3. Certain details developed by the New York illness census are presented in Tables 4, 5 and 6.[7]

In April, 1917, the director of the Framingham (Mass.) Community Health and Tuberculosis Demonstration conducted a sickness survey[8] of Framingham, a city of about 13,000 inhabitants. In the course of this work, 6,582 individuals were reached, and 407 cases of illness discovered. This represents a sickness rate of 62 per thousand. Of the total number of individuals reached, 3,212 submitted to a medical examination with a view to discovery of hidden disease. Among these, 248 cases of sickness were found. This is a sickness rate of 77 per thousand. The group which refused to be examined, and limited cooperation in the census to voluntary admission of sickness, showed 159 cases of illness among 3,370 individuals—a sickness rate of 47 per thousand. These rates are much higher than those recorded in the surveys mentioned above. The explanation is found in a more liberal definition of sickness, the inclusion of a higher percentage of minor conditions, and more intensive publicity. The term "illness" in this census included "*all minor and serious affections in need of medical or dental advice or treatment.*" *Under the sickness* survey of the Metropolitan Life Insurance Company, the term "illness" was restricted to mean "an illness so serious that it either necessitated or should have necessitated the patient's going to bed or securing medical aid." A retabulation of the Framingham sickness survey on the basis of the latter definition established a sickness rate of 18 per thousand. This, it will be noticed, is approximately that of the Metropolitan Life Insurance Company survey. Within a few weeks after this sickness survey had been completed, a special patriotic census was taken in Framingham which covered 3,101 families, comprising 12,300 individuals. This census was taken largely by volunteer lay workers with no special training for the work. The definition of the term illness was the same as that used in the first census. The sickness discovered produced a rate of 32 per thousand.

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[3] See bibliography attached to this report for reference to publications prepared by Dr. Lee K. Frankel, vice president, and Dr. Louis I. Dublin, statistician, Metropolitan Life Insurance Company, New York City.

[4] Known as "Health District No. 1," located on the lower east side of Manhattan.

[5] A detailed report of this census, entitled "Illness Census Taken in Health District No. 1," by Dr. W. H. Guilfoy, registrar of records, and Dr. S. W. Wynne, chief of the Division of Statistical Research, Department of Health, City of New York, will be found in the Monthly Bulletin of the Department of Health, City of New York, Vol. 6, No. 3, March, 1916.

[6] A detailed report of this census, entitled "Second Illness Census in the Experimental Health District," by Dr. S. W. Wynne, Chief of Division of Statistical Research, Department of Health, City of New York, will be found in the Monthly Bulletin of the Department of Health, City of New York, Vol. 6, No. 11, November, 1916.

[7] A masterly report on this census, prepared by Dr. S. W. Wynne, chief of the Division of Statistical Research, Department of Health, City of New York, appeared in the Monthly Bulletin of the Department of Health, City of New York, Vol. 8, No. 1, January, 1918. This publication goes into considerable detail on the relation to sickness of occupation, age, color, cause and duration of illness, character of treatment, degree of incapacity, method of feeding infants, housing, and general health problems.

[8] A detailed account of this survey is found in "The Sickness Census," Framingham Monograph No. 2, Medical Series No. 1, prepared by Dr. Donald B. Armstrong, executive officer, Community Health Station, Framingham, Mass.

TABLE 4.—POPULATION AND NUMBER OF PERSONS ILL ACCORDING TO AGE AND COLOR, AND RATES PER THOUSAND PERSONS IN EACH GROUP

Ages	Population: White	Population: Negro	Population: Total	Number of Persons Ill: White	Rate	Negro	Rate	Total White Negro	Rate	Second Illness Census*
Under 1 year.	308	670	978	4	13.0	19	28.3	23	23.5	31.2
1 to 4......	1,307	2,126	3,433	15	11.5	41	19.3	56	16.3	22.0
5 to 14......	2,897	3,688	6,585	50	17.2	71	19.2	121	18.4	15.7
15 to 24......	3,556	6,451	10,007	32	9.0	118	18.3	150	15.0	10.0
25 to 44......	6,716	20,189	26,905	91	13.5	575	28.5	666	24.7	26.2
45 to 64......	3,457	3,660	7,117	131	37.9	166	45.3	297	41.7	61.1
65 over.......	588	392	980	48	81.6	44	112.2	92	93.8	135.6
Unknown....	179	492	671	..	....	..	....	..	....	.....
Total.....	19,008	37,668	56,676	371	19.1	1,034	27.5	1,405	24.8	24.5
Rate corrected for age..	......	......	......	...	18.2	.....	28.4	.....	25.0	28.1

* This column contains figures developed in the illness census referred to in Footnote 6.

In comparing the findings of the Framingham sickness census as to disability with those of the Metropolitan Life Insurance Company, it is necessary to bear in mind that the agents of the Metropolitan Life Insurance Company were instructed to report only illnesses causing disability, whereas the agents and nurses who made the Framingham survey were instructed to ascertain not only illnesses creating total disability, but minor illnesses as well. By applying the uniform definition of illness to the statistical results of the two censuses, it is found that the percentage of cases in which there was total disability was approximately the same in the two cases.

TABLE 5.—DEGREE OF DISABILITY ACCORDING TO SEX AND COLOR

Degree of Disability	Total, White and Negro: Both Sexes No.	%	Male No.	%	Female No.	%	Both Sexes: White No.	%	Negro No.	%
Total persons ill.......	1,405	100	513	100	862	100	371	100	1,034	100
Total incapacitated ...	925	66	384	71	511	63	261	70	664	64
Of which										
I. Up and around..	592	42	264	49	328	38	162	43	430	42
II. In bed	228	16	71	13	157	18	70	19	158	15
III. In hospital	96	7	43	8	53	6	24	6	72	7
IV. In sanatoriums .	9	1	6	1	3	0.3	5	1	4	1
Total ill but able to work	434	31	138	25	296	34	105	28	329	32
Degree of incapacity not stated	46	3	21	4	25	3	5	1	41	4

Summarizing, so far as rather incongruous statistics can be summarized, it would appear that the sickness rate of this country varies from 20 to 25 per thousand, and the disability rate from 16 to 20 per thousand, the average for the former being around 22 and for the latter around 18. When minor and trivial illnesses of all sorts are included, and particularly *ailments which should have medical or dental* advice or treatment, the number of cases of sickness discovered is greatly increased. The rate in such cases has been found to run at from 40 to 70 and more per thousand, according to the thoroughness of the survey. In all probability the sickness and disability rates quoted above are somewhat too low, because of a natural tendency toward concealment of certain forms of sickness, in particular tuberculosis and venereal diseases. Sometimes concealment is unintentional and due to ignorance of the diseased condition. The Framingham census clearly brought out this point. The number of cases of sickness discovered among individuals who submitted to medical examinations was considerably larger than in those

TABLE 6.—*DURATION** OF SICKNESS TO DATE OF INQUIRY CLASSIFIED BY CAUSE OF DISABILITY

Diseases	*Total* Persons *Ill* Both Sexes	One *Day*	Two *Days* and *Under* One Week	One Week and Under Two Weeks	Two Weeks and Under Three Weeks	Three Weeks and Under One Month	One Month and Under Two Months	Two Months and Under Three Months	Three Months and Under Six Months	Six Months and Under One Year	One Year and Under Three Years	Three Years and Over	Not Specified
Tuberculosis..................	48	..	...	...	3	..	1	2	4	8	10	12	8
All other general diseases....	498	23	104	101	61	21	39	24	27	14	27	42	15
Nervous diseases.............	131	..	4	8	6	2	6	8	10	7	18	47	15
Circulatory diseases.........	89	1	3	4	2	6	7	9	12	5	12	25	3
Respiratory diseases.........	119	..	10	12	14	9	19	5	12	6	4	15	13
Digestive diseases............	107	2	12	7	8	9	14	7	9	5	15	13	6
Normal labor.................	28	2	8	6	2	1	2	1	1	4	..	..	1
Total puerperal diseases.....	84	2	8	6	2	2	3	2	1	4	2	..	2
Total all others.............	3 9	9	33	18	35	26	40	24	29	25	42	70	28
Grand total............	1.405	37	174	156	131	75	129	81	104	74	130	224	90
Per cent.	100	2.63	12.40	11.10	9.32	5.34	9.18	5.77	7.40	5.27	9.25	15.95	6.41

* Note that complete duration of sickness is not known, but only the time which elapsed from the date on which sickness set in until the date of the survey.

cases in which the voluntary admission of the person approached had to be accepted as final. It is interesting, too, that in case of the Framingham census more than half of the people refused a free medical examination. Enough is revealed by these various surveys to demonstrate the fact that sickness and disease are responsible for extraordinary suffering and loss of life wholly aside from the enormous economic loss.

URBAN AND RURAL SICKNESS RATES

There is much reason to believe that the rural sick rate exceeds that of the cities. If this is true, then the rates given on the preceding page, which are based on a mixed population, both urban and rural, are an understatement of conditions of morbidity in the open country. It is generally accepted that sickness rates follow the trend of death rates. If judged by the death rate, the open country undoubtedly was more healthful than the city in times past. During recent years, however, under the impulse of effective health administration in the cities, there has been a constant decline in the urban death rate. The rate in the country regions, on the other hand, has remained much the same. So it has come about that in some states the city rate is now lower than the country rate, the difference being increased with every succeeding year. New York State presents a typical example of this change. Figure 1 illustrates the point.

In comparing city and country death rates, it is well to bear in mind that the two are not closely comparable. The city death rate tends to be somewhat lower because of a preponderance of population in the middle ages, owing to immigration. The country death rate tends to be somewhat higher than in former years, owing to a more complete report and registration of deaths. However, there seems little doubt that the urban death rate is falling much more rapidly than is the rural rate.

Some rather interesting and definite information as to the difference in health conditions between city and country has also been developed in connection with the examination of large numbers of schoolchildren in various states. Health defects appear to be far more common among country than among city schoolchildren. This situation is illustrated by Figure 2.

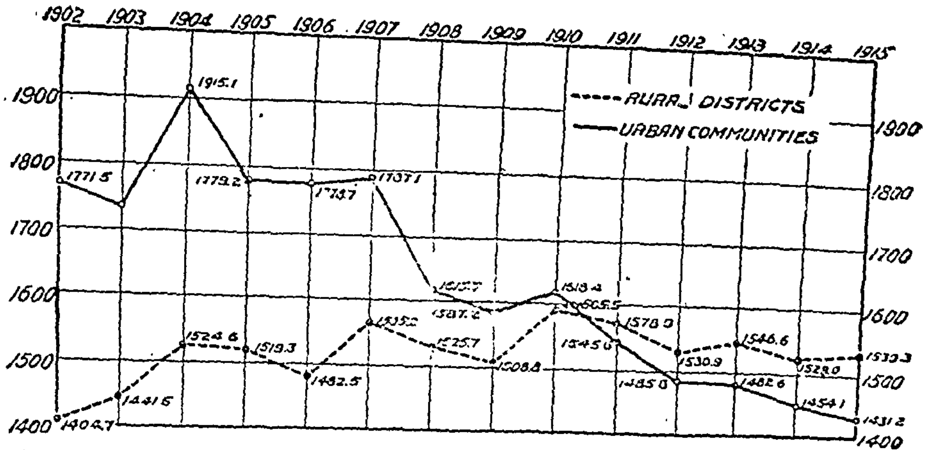

Fig. 1.—The rural and the urban death rates in New York State (communities with a population less than 8,000 classed as rural).

When it is remembered that 12,000,000, or 60 per cent., of the 20,000,000 schoolchildren of the nation attend country schools, the disadvantage in health which the country suffers on this score alone is considerable. Many of the defects of schoolchildren greatly impair usefulness in later years. It is well known that conditions of sanitation at schoolhouses, as well as at large numbers of country homes, beggar description, and that there is much ignorant and false economy in all matters involving health.

Attention may also be called to the fact that in health matters there is strong interdependence of urban and rural communities. Soil, milk and water pollution in the country are likely to be felt in neighboring cities. The typhoid problem has in this respect become classical. The necessity of treating city and country as substantially a part of one and the same administrative unit in health work is being more and more clearly recognized.

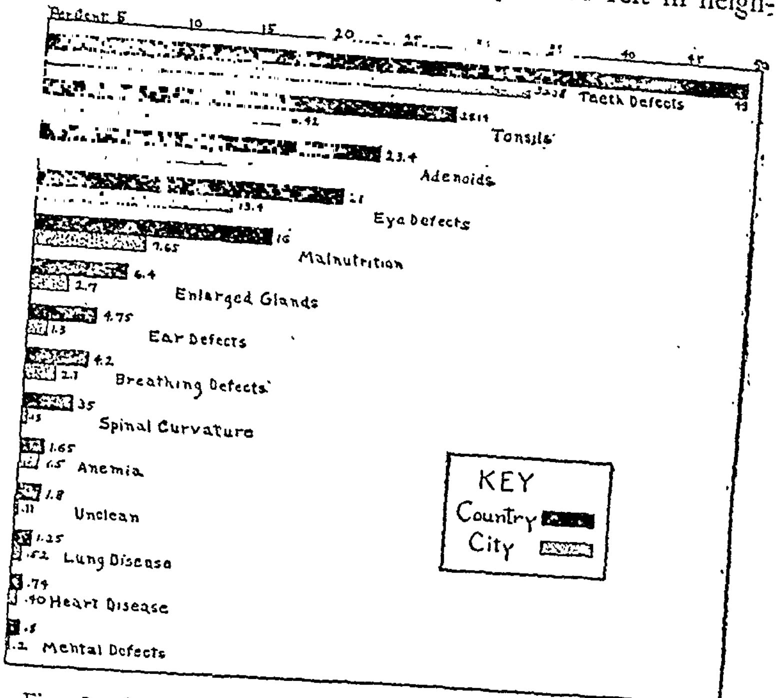

Fig. 2.—City and country death rates (through the courtesy of Dr. Thomas D. Wood, Teachers' College, Columbia University.

ECONOMIC LOSS DUE TO SICKNESS

The losses to society due to sickness are known to be many and heavy. Medical care and drugs must be paid for. Sickness is apt to have far-reaching effects in impairing the living and working efficiency of families affected by it. Then there is the sorrow, and physical and mental suffering, and the loss in actual working days, that is, in earning power. The latter item has been variously calculated and represents an enormous figure.

It is of interest, however, that of the total loss in time due to sickness, 65 per cent. is occasioned among children under 14 years of age. Twenty-four per cent. is among men and women from 15 to 54 years of age, and 11 per cent. is represented by men and women over 54 years of age, and by certain chronic cases, which in the particular survey under consideration were put in the latter group (Fig 3).

The economic loss, that is, the wage loss, falls largely on men in the age group of 15 to 54. In days of sickness this wage time loss is about 12 per cent. of the total sickness time loss. It is on an average 6.7 days per man per year. Interesting calculations have been made to show the number of days lost by sickness among the working population. Thus, for the state of North Carolina, with a population of

1,431,136 over 15 years of age, it has been estimated that no less than 5,294,800 working days are lost per year by the male population alone, and 7,658,400 by the female population. The reader may attach his own value to the worth of a working day. Details are given in Table 7.

ABILITY TO PAY FOR MEDICAL SERVICES

It has been estimated that about 40 per cent. of the population of the United States is gainfully employed, and that 60 per cent. consists of wives, children and old people who are beyond the working age. It has also been estimated that this 60 per cent. of the population require per unit twice as much medical aid as do persons gainfully employed. An overwhelming burden of sickness hence rests on those gainfully employed.

Statistics have been compiled which show that 65 per cent. of the men 16 years of age and over, in the country, received a wage of less than $626 in 1904. Investigation has shown that in the same year it took about $854 a year in New York, and $750 in Buffalo for a family of man, wife and three children under school age to live. Savings are relatively infrequent among families with an income of less than $800. It was also found that the average annual surplus of a group of 200 families was only $15.13. This reduces the margin between economic dependence and economic independence in such cases to just about a single week's wages.[9]

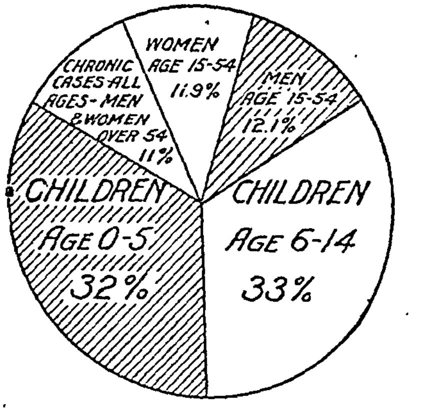

Fig. 3.—Days lost through sickness, classified by age of the sick.

The average duration of sickness among the general population (which includes wage earners) appears to be from six to twelve days a year. From one eighth to one twelfth of a given group of wage earners are every year disabled for work because of sickness. It is not surprising, therefore, that charitable agencies find sickness to be one of the chief factors creating dependency. In Massachusetts it is estimated that $1,500,000 is spent annually by local officials for poor relief on account of sickness. In 1916, sickness was present in 2,016 out of 3,000 families cared for by the New York Charity Organization Society. It was also the cause of need in 1,043 out of 2,043 families under care of the New York Association for Improving the Conditions of the Poor. No less than 42 per cent. of the money spent by this organization for material relief went to families in which sickness was present.

(To be continued)

TABLE 7.—ECONOMIC LOSS DUE TO SICKNESS AS REPRESENTED BY LOSS IN WORKING DAYS AMONG A WORKING POPULATION OVER 15 YEARS OF AGE, CLASSIFIED BY SEX

Area	Total Population	Population Over 15 Years of Age			Equivalent in Disabled the Year Round*		Estimated Number of Working Days Lost in Whole Area per Year†		Working Days Lost per Person per Year	
		Total	Male	Female	Male	Female	Male	Female	Male	Female
Boston	729,632	558,300	272,219	286,081	5,880	6,237	1,769,423	1,859,526	6.5	6.5
Rochester	250,747	185,911	92,552	93,392	2,147	2,400	617,861	719,118	7.0	7.7
Chelsea (N. Y. C.)	180,000	122,220	62,890	59,330	1,107	872	333,317	261,052	5.3	4.4
Kansas City, Mo.	305,815	207,648	106,848	100,800	2,318	2,338	683,827	766,080	6.1	7.6
North Carolina	2,371,095	1,431,136	708,163	723,173	17,987	21,589	5,382,039	7,376,365	7.6	10.2
Trenton	109,212	74,155	38,157	35,998	916	832	282,262	248,386	7.4	6.9
Pittsburgh‡	571,984	417,958	215,720	202,238	4,358	3,701	1,315,892	1,112,309	6.1	5.5
West Virginia‡	147,572	100,221	51,569	18,652	1,593	1,966	479,592	588,689	9.3	12.1
Cities of Pa. and W. Va.	1,294,623	879,049	449,326	426,723	10,379	9,473	3,115,282	2,901,716	7.0	6.8
Total	5,241,124	3,458,152	1,730,155	1,725,497	46,715	52,108	14,039,598	15,833,241	8.1	9.1

* In this column are shown the number of persons who, if disabled the year round, would represent a loss in working days equal to that suffered through sickness disability by the total population of the area.
† On the basis of 300 working days in a year.
‡ The figures for Pittsburgh and West Virginia are also included with the figures covering cities in Pennsylvania and West Virginia, given elsewhere in this table.

Therapeutics

THE COAL-TAR ANTIPYRETIC DRUGS

The drugs to be considered are acetanilid, antipyrin and acetphenetidin (phenacetin). Other newer similar drugs have not been proved more efficient or less toxic than these three; hence it is not worth while to discuss other than these. It is essential to state at the outset that these drugs are all similar in their action, and that all are used for the same conditions and for the same therapeutic objects. In overdosage all cause the same symptoms of poisoning, and the treatment of such poisoning is the same in each instance. These drugs do, however, vary as to their dosage, with a corresponding variance in the amount of chemical reaction produced in the body. Antipyrin is very soluble, but is nauseating, in solution, and may cause vomiting. The other two drugs are only slightly disagreeable to the taste, and hence are readily administered in tablet or powder and rarely cause vomiting. Antipyrin, being more irritant than the other two drugs, may produce sufficient irritation of the duodenum to cause urticarial disturbances of the skin. Antipyrin may also cause irritation of the kidneys, even sufficient to cause albumin and blood to appear in the urine. Acetphenetidin and acetanilid in safe doses do not cause skin or kidney disturbances.

Antipyrin is somewhat astringent, and has antiseptic properties. Acetanilid has mildly antiseptic properties, and a few years ago it was largely used in surgical dressings, as it is cheap and nonirritant. Antipyrin causes more perspiration in feverish processes than do the other two drugs. Acetanilid is more depressant to the heart than the other two, but not more so in small proper therapeutic doses. Acetanilid, when first presented, was called antifebrin and was given in dangerously large doses (often 10 grains being given and the doses frequently repeated) and caused many deaths. Also, acetanilid, being the cheapest of these three drugs, entered into most of the antiheadache and antipain nostrums and "patent medicine" powders and tablets, and repeatedly these preparations have caused death. Hence acetanilid received a bad name that has clung to it. It does not deserve it. In proper small doses it is the most efficient of the three, and the dose may be so small that there is no chemical irritation or disturbance from it. It is a clinical fact that small doses of acetanilid are no more likely to cause cardiac depression than are the larger doses of acetylsalicylic acid now so freely taken by the laity.

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[9] These figures are, of course, quite obsolete today. They are presented solely because they suggest the nature of the economic problem involved, not because they offer a close measure of present-day standards.

Acetphenetidin (phenacetin) is perhaps less of a depressant in therapeutic doses than is acetanilid, but much more must be given, and it more often fails to relieve pain and fever.

The clinical proportionate doses are about as follows: acetanilid, 0.1 gm.; acetphenetidin, 0.3 gm.; antipyrin, 0.5 gm.

ACTIONS DESIRED OF THE DRUGS

The actions desired of these drugs are (1) a lowering of the temperature, and with it, a lowering of the blood pressure and increased perspiration, and (2) cessation of pain.

In ordinary doses these drugs rarely cause any other symptoms. If pain is not acute, sleep may be produced by a general relaxation through these drugs. Muscle spasm is relaxed perhaps more especially by antipyrin.

LIMIT OF SAFETY

The action described above is the only activity desired of these drugs. If the patient becomes cold, the lips blue and the pulse weak, the limit of safety has been more than reached, and the next stage is that of shock, cyanosis and collapse.

Occasionally a patient shows an idiosyncrasy against these drugs, being readily depressed, even by small doses. Most idiosyncrasy, however, is against antipyrin, it causing too profuse perspiration, dizziness and cyanosis, and some somnolence.

CONTRAINDICATIONS

These drugs should not be used (1) in low blood pressure; (2) in weak heart; (3) in anemia; (4) to reduce temperature later than the very first stage of an acute illness, or (5) repeatedly for recurrent pain, lest anemia and chronic depression be caused.

Antipyrin should not be used when there is inflammation or irritation of the kidneys.

TREATMENT OF POISONING

If symptoms of poisoning occur and any of the drug used is presumably still in the stomach, it should be gently washed out, for which purpose the stomach tube is best used. As there is generally great prostration, emetics should ordinarily *not* be used. The rest of the treatment is as for shock, namely, dry heat, a hot water bag over the heart, strychnin, atropin, suprarenal or pituitary extract, and later, digitalis. The foot of the bed should be raised.

If the drug causing the poisoning is antipyrin, large amounts of water should be given to remove the irritant from the kidneys. Alkaline solutions, as sodium bicarbonate, are beneficial in all cases of coal-tar poisoning.

INDICATIONS FOR USE

These drugs may be used:

1. *To Lower the Temperature.*—For this purpose they may be used in the first stage of any feverish process, provided the heart is not weak and the patient not anemic. At the same time that they reduce temperature, they stop or lessen headache, backache and general myalgias; also the heart will be slowed and the blood pressure lowered. The dose of acetanilid and of acetphenetidin is always so small that they do not irritate the kidneys; nor will antipyrin in ordinary doses often irritate the kidneys. Generally, as the temperature is lowered, there is sweating.

2. *To Relieve Pain.*—These drugs are useful in all neuralgias and myalgias, but of little value, in safe dosage, in pain caused by local inflammation or a colic. All pain in the head may be lessened by these drugs, owing to their ability to lower the blood pressure, and hence to diminish the cerebral tension. They can cause sleep only by such action. They are not real hypnotics. Although these drugs will lower blood pressure and quiet a too active heart, it is generally unwise to use them for that purpose, as the heart muscle may be weakened by them. They are often of value in ameliorating the pain of dysmenorrhea.

3. *To Relieve Muscle Spasm Due to Increased Nervous Irritability.*—To meet this indication, antipyrin is perhaps the best drug of the three. For this purpose it is valuable in whooping cough; in the pains of locomotor ataxia; in painful muscle contractions in neuritis; in various forms of muscle twitching, as in chorea, and in spinal irritability. It acts in these conditions by diminishing spinal cord sensibility and lowering reflex irritability.

In whooping cough, antipyrin is a valuable drug, and may be given in 0.05 gm. doses (about 1 grain) for each year of the child's age. It may be dissolved in plain water and given in lemonade or orangeade; or it may be dissolved in peppermint or wintergreen water. Older children may take it in capsules, swallowed with plenty of water. The dose proper for the age may be given three or four times in twenty-four hours, depending on the frequency of the paroxysms. As soon as the paroxysms diminish, the frequency of the dose may be lessened. Coincident with its administration, the child should generally receive small doses of digitalis.

Antipyrin has sometimes been used with success in acute chorea. It has been used with more or less success in large doses for the pains of locomotor ataxia, and is certainly valuable, especially as it obviates the necessity of early administration of morphin for these excruciating pains. In this condition it has seemed to be more valuable than the bromids.

In muscle spasms occurring in acute neuritis it does not seem more valuable than bromids, but absolute rest of the part affected, as a splint in acute sciatic neuritis, is more effective than drugs.

ADMINISTRATION

The dose of acetanilid for an adult is from 0.05 to 0.25 gm. The large dose should rarely be given, and never repeated. A 0.05 gm. dose may be given every hour for six doses; a 0.10 gm. dose every two hours for three doses, and a 0.15 gm. dose every three hours for two doses.

While under the action of acetanilid, the patient should remain at rest, if a feeling of depression is to be avoided. Some practitioners use this drug carelessly, while others, who have observed unpleasant or dangerous effects, are afraid to give it at all. Acetanilid is a very useful drug if used properly.

It should be given as a powder or tablet, and swallowed with plenty of water. A tablet should be crushed with the teeth and not swallowed whole. It is not more safe to give acetanilid with caffein, although when given for headache, in a combination with caffein it may act better than when it is given alone. It is often given with sodium bicarbonate, which is said to somewhat protect the heart. It is well administered as:

	Gm.
Acetanilid	0.3
Sodium bicarbonate	1.0

Make three powders. Take a powder every two hours, with water.

Or, tablets may be kept in the pocket case or office, each containing acetanilid, 0.05 gm., and sodium bicarbonate, 0.20 gm. This allows the dose to be easily arranged for children.

For headache the following is of value:

	Gm.
Acetanilid	0.2
Citrated caffein	0.3
Sodium bicarbonate	2.0

Make two powders. Take one at once, and repeat in two hours, if needed.

Acetphenetidin, antipyrin or acetylsalicylic acid may be used in place of acetanilid, if desired.

Each physician should write his own prescription for combined drugs for his office use. He should not rely on ready-made preparations. Almost all of the headache powders and tablets on the market, "patented" and nostrum, contain acetanilid, or, since the patent rights terminated, acetphenetidin.

The dose of acetphenetidin is from 0.3 to 0.5 gm., and it is best administered in a powder. It may be given in a capsule, but for quick action the capsule should be uncapped before swallowing. Plenty of water should always be taken with it. The same drugs suggested for combination with acetanilid may also be combined with this drug. An efficacious combination for the fever and pains of tonsillitis or influenza is:

	Gm.
Citrated caffein	0.5
Acetphenetidin	1.5
Phenylsalicylate (salol)	1.5

Make five powders. Take one powder every three hours.

Much larger doses of this drug may be given, such as 0.5 gm. or even 1.0 gm., but a large dose should not be repeated.

Antipyrin is best given in solution in water, or it may be given in capsule. The capsule may be uncapped at the moment of swallowing. While the U. S. P. dose is stated to be 0.3 gm., such an amount is a small dose for antipyrin. The ordinary dose is 0.5 gm., and even a much larger dose is often given. A large dose should, of course, not be repeated in the same twenty-four hours. If this drug is given for any length of time, it causes deterioration of the blood and general debility the same as does acetanilid. A patient may acquire a tolerance to it, especially one suffering from locomotor ataxia.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE.—It is well established that a far more durable immunity against diphtheria is established by the use of a mixture of diphtheria toxin and diphtheria antitoxin than by the latter alone. The immunity does not appear until a considerable period of time has elapsed and for this reason the mixture is not applicable in the presence of an outbreak of the disease, in which case it is better to use an immunizing dose of antitoxin alone.

Various mixtures of toxin and antitoxin have been used, but in general the over neutralized mixture seems to be preferred. Several doses are usually required to induce immunity.

The toxin-antitoxin mixture finds its greatest field of usefulness in the immunization of the inmates of children's homes and asylums, those who often come in contact with diphtheria, schoolchildren, and children below the school age.

Only those persons who are positive to the Schick test need be immunized and the progress of the immunization may be determined by the response to the Schick test at intervals during the period of immunization.

Lederle Antitoxin Laboratories, New York. (Schieffelin and Co., New York.)

Diphtheria Toxin-Antitoxin Mixture.—A mixture consisting of 5 L+ doses of toxin and 6.25 units of antitoxin, marketed in rubber-stoppered vials containing one dose. Three doses are packed in each carton.

MERCURIALIZED SERUM.—A solution of mercuric chloride in normal horse serum diluted with physiological sodium chloride solution. It is prepared by the method of C. M. Byrnes (J. A. M. A. **63**:2182 [Dec. 19] 1914).

Actions and Uses.—Mercurialized serum is proposed for the treatment of syphilis, particularly the cerebrospinal type. This is an attempt to produce a preparation which, while therapeutically active, is noncorrosive, has a low toxicity and slight local irritative action, does not coagulate serum albumin, and which consequently is adapted to intraspinal use and can be used intravenously without danger of phlebitis.

Dosage.—Intraspinally, 30 Cc. of a solution, the dose containing the equivalent of 0.0013 Gm. (1/50 grain) mercuric chloride, after *first* withdrawing sufficient spinal fluid to reduce the pressure to 30 mm. (water). The dose may be increased, when tolerance is established, to 30 Cc. of a stronger solution, the dose containing the equivalent of 0.0026 Gm. (1/25 grain) mercuric chloride. Intravenously, 2 Cc. of solution, the dose containing the equivalent of 0.0055 Gm. (1/12 grain) mercuric chloride.

Mercurialized serum is prepared by adding to a solution of mercuric chloride sufficient normal horse serum to dissolve the precipitate first formed and then diluting to the desired volume with physiological sodium chloride solution.

Mercurialized Serum-Lederle.—A brand of mercurialized serum complying with the N. N. R. description.

Manufactured by Lederle Antitoxin Laboratories, New York (Schieffelin & C., New York). No U. S. patent or trademark.

Mercurialized Serum-Lederle, Dilution No. 1.—Each package contains mercuric chloride 0.0013 Gm. (1/50 grain) in 30 Cc. of diluted normal horse serum, and a complete equipment for intraspinal administration.

Mercurialized Serum-Lederle, Dilution No. 2.—Each package contains mercuric chloride 0.0026 Gm. (1/25 grain) in 30 Cc. of diluted normal horse serum, and a complete equipment for intraspinal administration.

Vocal Gymnastics for Stammerers.—Vocal gymnastics, if thoroughly practiced, will not only intensify the auditory images of the stammerer (thus correcting forgetfulness of the sound of the vowels) but develop stronger vocal cords, producing a new voice and giving an easier control, thus removing overinnervation, or the straining to produce sound. —*School Health News*, New York.

THE JOURNAL OF THE
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SATURDAY, APRIL 26, 1919

THE PROVISION FOR CHILDREN IN THE INCOME TAX CREDITS

In addition to the personal exemption of $2,000 allowed to a husband and wife living together, the income tax act provides for this additional credit:

> $200 for each person (other than husband or wife) dependent upon and receiving his chief support from the taxpayer, if such dependent person is under eighteen years of age or is incapable of self-support because mentally or physically defective.

We do not know the theory on which the precise sum equivalent to one fifth of the credit allowance for adults was incorporated into the act as an evident exemption for the support of children. It has doubtless received careful consideration from the economists in whose hands the provisions for the tax budget rest; and it presumably represents the consensus of wisdom of the experts in this field.

A prominent American daily newspaper recently asked in its editorial columns, "On what provender did the framer of the income tax law which allows $200 exemption for the support of each child rear his own offspring?" This is a personal question best answered by the individual referred to. Speaking in a serious vein, it is not impossible to analyze the figures from the standpoint of the average family budget and to consider whether the provision for children represents a just expression of their share in the essential expenditures for the necessities of life.

The "ideal division" of an income of $1,000 a year has been thus expressed: food, 30 per cent.; rent, 20 per cent.; clothing, 15 per cent.; operating expenses, 10 per cent.; "higher life," 25 per cent. A study made a few years ago by Winifred Stuart Gibbs[1] on the minimum cost of living in families of limited income in New York, before the present greatly increased price of food and clothing, indicates an actual expenditure of between $290 and $390 per person per year instead of the $300 postulated in the ideal scheme. These are not items from the household expenditure of the fairly well-to-do classes, but rather the expression of needs among the less-well-to-do families at a time when the purchasing power of money was decidedly greater than at present.

Let us apply such facts to the provisions of the income tax act. Thirty per cent. of an exemption of $2,000 represents $600 as a reasonable food budget for two adults. If we place the requirement of the woman at 0.8 that of the man, $600 would be expected to provide the diet for 1.8 family units. Assuming an average family of five, i. e., including three children, whose ages are distributed for purposes of argument at 16, 10 and 2 years, respectively, their dietary needs may be expressed as 0.9+0.6+0.3, or 1.8 units —approximately the same as that of the two parents. These figures for the relative calorific needs of food according to age and sex are higher than those accepted in former years for children, but they accord more fully with modern knowledge and were adopted by the Interallied Scientific Food Commission as a basis of its discussions and recommendations. According to the tax act the three children would entitle the head of the family to an additional exemption of $600. Thirty per cent. of this sum, assigned to the provision of food, represents only $180, or slightly more than one dollar per week for each child. But perhaps in these days of conservation we are not expected to provide for education, recreation and saving, not to mention clothing and shelter, for the younger members of the household, except at the expense of the "higher life" of the adults.

UNDERNUTRITION AND DISEASE—A SURVEY OF WAR-TIME DANGERS

In last week's issue of The Journal,[1] the food situation in Germany, as presented by the men of science of that nation, was brought to the attention of our readers. The physiologist Rubner has pictured the condition as one of undernutrition and malnutrition of the population. He remarks that the nutrition of the immediate future involves a problem different from that of the past; it will mean reparation of the enormous depletion of the body reserves of the people at large. The laws of hygiene, says Rubner, must be restored to dignity. When the condition of nutrition of the masses is restored, the desire to work, the capacity for performance, and initiative of body and mind will return. But he adds that the program calls for patience, since convalescence cannot be accomplished in a day. Bread and potatoes do not suffice to produce muscle. Compulsory rationing, which never properly provides for the special nutritive needs of the individual, must be discarded as soon as a return to nutrition-promoting rather than depleting systems of diet becomes possible.

What Germany's food shortage, which began to be acute in 1916 and especially pronounced in 1917 and thereafter, has meant in clinically observable ways has been portrayed by Kraus[2] of the medical clinic at the Charité Hospital in Berlin. He reports diminished resistance to disease, hastening and intensification of the course of certain maladies, the appearance of an illness characteristic of hunger, and a decided increase in mortality. The deleterious effects of marked decreases of the total food intake in general have been most pronounced in institutions, such as prisons, asylums and orphanages, in which the food supply was limited to the inadequate governmental ration. In such establishments those who were physically well suffered from the inanition no less than did the sick and ailing. Kraus has given an instructive account of the disease known as war edema, which has made its appearance wherever food supplies have been pronouncedly deficient. In Germany the "starvation edema" is described as a malady conspicuous particularly in the colder season among men who have been compelled to work with a food intake of less than 1,300 calories a day containing little fat, not more than 50 gm. of protein, and a large proportion of indigestible cellulose-containing food products. Kraus states that thousands, emaciated to even less than half of their former weight, have suffered from this disease. The mortality sometimes amounted to 50 per cent. The incidence of tuberculosis seems to have increased; and as a result of undernutrition, the protective devices of the organism, such as are expressed in immunity reactions, have deteriorated.

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[1] Gibbs, W. S.: The Minimum Cost of Living, New York, the Macmillan Company, 1917.

[1] The Food Crisis in Germany, editorial, J. A. M. A. 72:1160 (April 19) 1919.

Aside from the inadequate quantitative relations of the war-time ration, the changes in the character of the food supplies have likewise not failed to produce harm. There is an ever growing list of cases of intestinal disturbances attributable to the monotonous, voluminous, poorly digestible, carbohydrate diet. The variety of the afflictions includes gastric dyspepsia with achylia, occasional diarrheas, intestinal fermentations, constipation with marked catarrhal conditions of the bowel, and not infrequently severe ulcers. Kraus has emphasized the essential deficiencies of the German rations by pointing out the need of fat, condensed milk, meat, digestible carbohydrate, fresh fruit, tea and coffee, as well as cereals more suitable for the preparation of better bread. Czerny, the pediatrician, has likewise emphasized the conditions which the food crisis has brought about in the health of German children, and points out to what extent they have failed to obtain protein and fat in recent years. Czerny reminds us of the fact, familiar to every practitioner, that bread and potatoes do not constitute a complete diet for youth. The results of such a limited ration fortify this conclusion.[3]

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[2] Kraus, F.: Berl. klin Wchnschr., Jan. 6, 1919, p. 3.

[3] Child Welfare and Disease Under War-Time Food Conditions in Central Europe, editorial, J. A. M. A. **72**: 939 (March 29) 1919; Defective Nutrition of Children in War-Stricken Europe, ibid. **72**: 1002 (April 5) 1919.

THE CRISIS IN PNEUMONIA

The recovery of the pneumonic patient by crisis is one of the most satisfactory and interesting clinical phenomena that come under the observation of the physician. The investigations of few problems can be more valuable than those that are concerned with the study of the mechanism involved in this reaction. It is true that no startling changes have taken place in the treatment of this disease during the last decade, except possibly in the treatment of the rather limited class of Type I cases. Nevertheless, our knowledge of pneumonia has been measurably extended, and with the broadened point of view has come greater possibility.

In a recent study, Weiss[1] reaches the conclusion that we must consider a dual source of intoxication in pneumonia, the one a specific sensitizing protein identified as a pneumotoxin and derived from the disintegrating organisms, the other an extremely toxic albumose, derived as a digestion product from the autolyzing exudate. With this as a basis, hereafter we must consider at least two corresponding biologic balances in the crisis mechanism: (*a*) that of the antigen and antibody, wherein we seek to explain the crisis as a destruction of the antigen by the antibodies, and (*b*) the ferment-antiferment balance, according to which the crisis may be supposed to occur when the protease liberated from the leukocytes or thrown into the circulation from distant organs is able to overcome the inhibition of the antiferment present in the blood and the exudate.

Of the former of these two balances we possess a fairly clear picture. Blake[2] has recently pointed out that patients "developing an excess of precipitins and agglutinins have invariably recovered shortly after or coincident with the appearance of these antibodies." On the other hand, "cases showing a progressive increase in the excess of antigen (circulating) without the development of demonstrable antibodies have invariably been fatal." Analogous results have been reported with respect to the opsonins.

Of the ferment-antiferment balance we as yet know relatively little. Von Müller gave impetus to studies in this direction, and Jobling and his associates[3] have emphasized the fact that the huge mass of slowly autolyzing exudate in the lung is the most important source of toxic material. According to their conception, the crisis represents merely the point when active autolysis is established and a rapid splitting of the accumulated exudate to nontoxic products takes place. The precise mechanism involved in this digestive process is as yet undetermined. Three hypotheses deserve consideration: (1) that the crisis represents actual saturation of a possible lipoidal antiferment by means of the great excess of leukoprotease that must be liberated from the leukocytes present in the exudate; (2) that it is due to the activation of the proteolytic ferments by a progressively increasing acidity of the exudate, and (3) that the inhibiting substances are themselves inactivated by a relative shifting in the hydrogen-hydroxyl concentration. Possibly all three changes occur more or less simultaneously and tend to bring about local conditions favoring rapid autolysis. Since autolyzing lung exudate, according to the researches of Almagia, forms an unfavorable medium for the growth of the pneumococcus, the reflex effect of these biochemical alterations on the bacterial proliferation is evident.

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[1] Weiss, Charles: Biochemical Studies of Pneumonic Exudates, Arch. Int. Med. **23**: 395 (March) 1919.

[2] Blake, F. G.: Antigen-Antibody Balance in Lobar Pneumonia, Arch. Int. Med. **21**: 779 (June) 1918.

[3] Jobling, J. W.; Petersen, W. F., and Eggstein, A. A.: J. Exper. Med. **22**: 568, 1915.

No matter whether our future advance in the therapy of pneumonia will be by means of immunity or chemotherapy or through such biochemical studies as those of Weiss, the prospect of widening methods of attack of the problem is encouraging.

Current Comment

STANDARDIZED MILK

The use of the term standardized or "adjusted" milk for milk in which the original ratio of fat to the other milk solids has been altered by the removal or addition of cream or by the addition of skim-milk is becoming so general that it is timely to discuss, as Van Slyke[1] has recently done, the implications of the expression and the significance of the practice itself. Standardization of milk in this sense consists essentially in bringing about a more uniform composition by removing all or most of the fat that is in excess of the legal standard (usually 3 per cent.) or by adding cream to normal milk that has for one reason or another dropped below the legal standard. As well known, normal Jersey milk usually exceeds the maximum fat standard by a considerable margin; normal Holstein milk may at times fall below. The advantages of the adjustment from the side of the distributor are obvious: Such a grading down or grading up to the legal standard enables large dealers to furnish milk with a relative uniform composition conforming to legal regulations, and to equalize the nutritional quality of milk derived from producers scattered over a wide territory. The disadvantages are mainly the inevitable tendency of such a practice to lower the fat content of milk to a point hardly if at all above that of the minimum legal standard. It is perhaps not necessary to add that this would eventually lead to the general marketing of milk with a considerably lower percentage of fat than that which now prevails. Normal milk with 4 or 5 per cent. of fat would practically disappear. On the sanitary side, the extra handling which such adjustment would involve would expose the milk to possible contamination unless special care were used. On the other hand, objections based on the fact that standardization disturbs the normal relations of fat and solids not fat can have little weight. The "modification" of milk for infant feeding has shown plainly enough that entirely normal cow's milk is not an ideal food for every human organism, and may be changed in various simple ways greatly to the advantage of the individual consumer. Van Slyke suggests that the temptation to indulge in profiteering by excessive fat removal may be met by requiring the labeling of containers of "standardized" milk with the specified minimum percentage of milk fat. This would be in line with the general movement to give the consumer true information as to what he is buying. From time immemorial the purchaser of "a pig in a poke" has come off second best. The fair and honest dealer, as well as the consumer, has much to gain from such a regulation, since he is thereby removed from direct competition with the greedy milk "adjuster" who skims milk down to the legal limit. Proper sanitary safeguards should, of course, be thrown around the process of standardizing milk. Van Slyke makes the excellent recommendation that a special state license should be required for those engaging in milk standardization, and that suitable methods and conditions be prescribed for the process. There has been in the past some reluctance on the part of food officials to take adequate cognizance of the frequency and importance of the practice of milk standardization. The awkward problems it raises have perhaps something to do with this; but it would now seem as if the time had come to deal more directly with a matter that has obvious relations with economic nutrition and with sanitation.

ANTHELMINTICS

The accounts of the therapeutics of infestation with the more familiar and long known intestinal parasites, such as tapeworms, roundworms and threadworms, almost resemble chapters from the history of medieval medicine. Extracts of unfamiliar plants are favorite items. Spigelia, brayera, pomegranate, pumpkin seed and male fern are among the valued names in the domain of anthelmintic treatment. A moment's consideration will make evident to the student of this question that the accurate scientific study of the comparative efficiency of such substances, old or new, against intestinal parasites is complicated by the lack of a dependable test object. The direct therapeutic test on man is seldom feasible, and the results thereby obtained are not easily evaluated with that degree of even semiprecision that attends a bio-assay of many crude drugs or potent substances in contrast with isolated active principles. Fortunately it has been found that the easily obtainable earthworm reacts with symptoms of toxicity to all clinical anthelmintics, just as do the parasitic intestinal worms. This fact has enabled Sollmann[1] of the Pharmacologic Laboratory at the Western Reserve University to reinvestigate the claims long made for certain crude products. He finds that many substances which are toxic to earthworms produce a primary irritation resulting in a withdrawal of the worm from the neighborhood of the poison.

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[1] Am. Food J. March, 1919.

[1] Sollmann, Torald: Anthelmintics: Their Efficiency as Tested on Earthworms, J. Pharmacol. & Exper. Therap. 12: 129, 1918.

By virtue of this effect, says Sollmann, anthelmintics doubtless often "expel" the parasite when the concentration does not rise sufficiently high to kill the worm. Spigelia, long recommended for the expulsion of the roundworm, is found to have rather feeble toxicity. But fresh (germinable) pumpkin seed and squash seed are quite highly efficient, the active principle being soluble in water and destroyed by boiling. Sollmann points out that in view of their cheapness, availability, and presumably low toxicity to man, renewed clinical interest in these humble products is indicated. This, we may add, is doubly true at a time when the supply of less common drugs is still far from abundant.

THE UNIVERSITIES AND THE PUBLIC HEALTH

Many years ago, Thomas H. Huxley said that what people call applied science is nothing but the application of pure science to particular classes of problems. The growing realization of this truth is one of the factors that are rapidly changing the attitude of the older universities toward those questions that directly involve the progress and welfare of mankind. The day has passed when it was fashionable to select a form of education devoid of science, and a collegiate career "devoid of continuous intellectual effort." Those persons who are engaged in solving the "practical affairs" of life have begun to realize that familiarity with scientific research as it is conducted in university laboratories is a distinct advantage. On the other hand, even the most orthodox of the great educational centers are beginning to experience a revolution of attitude toward those technical problems which demand a solution for the sake of national progress. The war has shown how well the American university could meet the test of great problems having more than so-called academic interest. A peculiarly promising phase of this newer attitude is seen in the growing enthusiasm of our universities for the recent development of preventive medicine and the movement for public health. Not long ago practical hygiene was something apart from the collegiate institutions. In response to demand for appropriate training, special courses began to be provided in a few university centers. President Vincent of the Rockefeller Foundation recently traced this development in an address at the anniversary exercises of Johns Hopkins University.[1] Pennsylvania took the lead in 1909, followed the next year by Harvard and the Massachusetts Institute of Technology, which cooperated in establishing a curriculum. By 1915, eight other institutions were giving more or less attention to the training of public health officers. The latest academic affiliation of the public health movements is found in the new School of Hygiene and Public Health, which opened its doors at Johns Hopkins University last October as an institution with an individuality apart from that of the closely affiliated medical school, hospital and other university departments. With each new establishment for the prosecution of this educational work, added dignity is given to the training of public health officers, laboratory men, specialists in epidemiology, field workers of all kinds, public health nurses and others. Verily, times and the attitudes of educators change. Public needs can no longer be ignored, even if they represent the seemingly ultrapractical. As Vincent summarizes the tendency of the times, when many things seem uncertain and there are some reasons for grave anxiety, hope and courage are found in the idea of the university, a center of research, of scientific idealism, of professional pride, and of loyalty to the community, entering the field of public health.

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[1] Vincent, G. E.: The University and Public Health, Science **49**: 245, 1919.

WHAT IS THIRST?

The sensations of hunger and thirst are sometimes related to various pathologic manifestations in such an unusual degree as to give concern to the physician respecting the manner in which they are to be satisfied. There are instances when the abolition of the pangs of hunger and thirst becomes truly a remedial measure. How are these sensations to be interpreted? What is their physiologic and psychologic background? The extensive investigations of Cannon at Harvard and Carlson at Chicago, in this country,[1] have contributed fundamental facts bearing on the nature of hunger. In distinction from appetite for food which is related to previous experiences that have yielded pleasurable sensations of taste and smell, the sensation of hunger has come to be definitely associated with powerful contractions of the empty or nearly empty stomach. The essential novelty or importance of this demonstration lies in the fact that a local origin is given to the hunger pangs, so that they can no longer be regarded primarily in the light of a "general sensation" representing some vague need of the body as a whole. In the past, thirst likewise has been the subject of a diversity of explanations. The popular conception represents it as a general sensation. Thus, half a century ago Schiff[2] declared that it arises from a lessened water content of the body, a condition in which the entire organism suffers. The local reference to the mouth and throat, like the local reference of hunger to the stomach, was said to be due to association of experiences. In a review of the various conceptions regarding the physiologic basis of thirst, Cannon[3] has championed the less generally accepted theory that thirst is a sensation of local origin. According to him the preeminent factor is the relative drying of the mucosa of the mouth and pharynx. This may result either from excessive use of the passage for breathing, as in prolonged speaking or singing; or it may be caused by deficient salivary secretion. The latter, according to Cannon, represents true thirst dependent on the fact that the salivary glands, which keep the buccal and pharyngeal mucosa moist, require water for their action. In contrast with other organs that may experience the same needs, the importance of the failure of the action of the salivary glands to the mechanism of the water supply of the body lies, to quote Cannon, in the strategic position of these glands in relation to a surface that tends to become dry by the passage of air over it. If this surface is not kept moist, discomfort arises and with it an impulse to seek well tried means of relief. Thus, Cannon concludes, the diminishing activity of the salivary glands becomes a delicate indicator of the bodily demand for fluid.

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[1] Cannon, W. B.: A Consideration of the Nature of Hunger, the Harvey Lectures, New York, 1911-1912. Carlson, A. J.: Control of Hunger in Health and Disease, Chicago, 1916. The Stomach in Hunger, editorial, J. A. M. A. **60**: 448 (Feb. 8) 1913; The Gastric Movements in Hunger, ibid. **61**: 1044 (Sept. 27) 1913; The Call of the Empty Stomach, ibid. **61**: 1300 (Oct. 4) 1913; The Voracity of Certain Diabetics, ibid. **62**: 621 (Feb. 21) 1914; New Facts About Hunger, ibid. **63**: 169 (July 11) 1914; The Hungry Infant, ibid. **69**: 1527 (Nov. 3) 1917; Hunger and Appetite in Fevers, ibid. **69**: 1614 (Nov. 10) 1917; The Hunger Sensation in Fasting, ibid **70**: 853 (March 23) 1918.

[2] Schiff, M.: Physiologie de la digestion, **1**: 41, 1867.

[3] Cannon, W. B.: The Physiological Basis of Thirst, Proc. Roy. Soc. London, Series B **90**: 283, 1918.

THE TEMPERATURE OF INFLAMED PERIPHERAL TISSUES

Inflammation is defined by MacCallum[1] as a complicated vascular and cellular response, which follows almost immediately on the injury, and is adapted, by bringing much blood to the spot and pouring out its elements on the injured tissues, to prevent the extension of the injury, hold in check the injurious agent, or even destroy it. An incident to this process as it occurs in peripheral areas of the body is a rise in the local temperature. This is commonly asserted to be due to the increased flow of blood to the inflamed part. Accordingly, the inflamed region is not supposed to have a temperature higher than that of the blood in the interior of the body. This widespread conviction has been fostered by textbooks and tradition, despite the fact that the hyperemia attending inflammation is by no means the only conceivable cause of the warmth perceived. There are tissues in the organism which unquestionably warm the blood; indeed, the maintenance of temperature must in the long run be dependent on a heat supply from within. At the laboratory of physiology in the University of Genoa, Italy, Segàle[2] has reinvestigated the possibility of an excessive localized production of heat in peripheral inflamed areas. He points out that in inflammation as well as in muscular contraction there may be notable local chemical activity. The circulation in both of these cases exercises its normal function, with the tendency of equalizing the temperature of the various areas. Segàle's calorimetric observations lead him to the conclusion, in contradiction to current beliefs, that the heat of inflamed parts has its origin primarily in the local biochemical activity of the cellular elements which participate in the inflammatory process. Special experiments supported the view that the increase in the temperature of the inflamed area is due to a local cellular hyperfunction; for when this cellular activity was paralyzed, the augmentation did not occur. According to this contention, we have been placing the cart before the horse in our conventional interpretation of inflammatory hyperemia. Segàle maintains that the latter, instead of being a necessary and constant source of the inflammation, must be considered a natural physiologic compensation for abnormal localized liberation of heat by the overactive cells of inflamed regions.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending April 18, the Medical Corps contained 18,745 officers, a decrease of 263 from the previous week. The Medical Reserve Corps contained 1,609 officers. The total number of medical officers discharged since the beginning of the war is 19,091.

Overseas Hospitals Patients in This Country

On March 31, there were 38,214 patients from overseas under treatment in Army hospitals in the United States, and also 18,765 domestic patients, making a total of 50,979 patients under treatment.

Weekly Bulletin, A. E. F.

(March 24, 1919)

This *Bulletin* is devoted to a discussion of a sanitary water supply, and especially to general consideration of typhoid.

DELOUSING OF TROOPS

Interesting figures are presented as to progress in delousing of troops. The most recent figures show that only 1.9 per cent. of troops are at present louse infested. The improvement in conditions is attributed to special efforts which have been made both by increasing facilities and attention to the subject. As an explanation of reports received from the United States that troops were arriving home louse infested, the statement is made that this is due to the condition of some of the ships on which the troops are carried. On February 28 it was necessary to take ashore the entire crew from the New Amsterdam for delousing purposes.

WEEKLY REVIEW

The total number of communicable diseases is decreasing with slight increases in chickenpox, diphtheria and typhoid. A slight increase has also been noted in the venereal disease rate, chiefly in Base Section No. 1 and the advance section. Over 50 per cent. of the new cases reported resulted from failure to take prophylactic treatment.

(March 31, 1919)

In this *Bulletin* officers are again cautioned as to the importance of making accurate reports of communicable diseases.

WEEKLY REVIEW

The measles rate and the rate for typhoid continue high. A small epidemic of measles developed among labor troops at Le Mans. The venereal disease rate has risen.

Distinguished Service Medals

Secretary Baker personally presented distinguished service medals on April 5 to the following named medical officers:

Dr. HUGH H. YOUNG, formerly Colonel, M. C., U. S. Army, Baltimore. For exceptionally meritorious and distinguished services. He has, by his constant application, tireless energy and foresight, lowered the nonefficiency rate of combat organizations, due to certain contagious diseases, far below prewar anticipations and has thereby aided in the conservation of manpower to a degree never before attainable.

Dr. WILLIAM S. THAYER, Baltimore, formerly brigadier-general, U. S. Army. For exceptionally meritorious and distinguished services. As chief consultant in medicine of the A. E. F., with untiring zeal he devoted his time, energy and high professional talents in promoting the organization of eminent medical officers for the prosecution of efficient treatment among the sick and wounded of the A. E. F. Largely through his individual efforts the treatment of the sick was so standardized, coordinated and proficiently perfected, as to result in a direct saving of many lives and a consequent conservation of manpower and morale of these forces.

JOHN M. T. FINNEY, Baltimore, Brigadier-General, U. S. Army. For exceptionally meritorious and distinguished services. He rendered distinguished services in the organization of surgical teams for the purpose of affording expert surgical aid to the wounded in the immediate vicinity of the battlefield. He had done much to standardize the practice of surgery in war, and giving so freely of his professional experience and skill. He has in many ways rendered services of exceptional value to the Government.

Distinguished Service Awards

The commander in chief, in the name of the President, has awarded the Distinguished Service Cross to the following named medical officers:

JAMES H. S. MORISON, Lieut., M. C., U. S. Army, Cumberland Gap, Tenn., attached 117th Infantry. For extraordinary heroism in action near Bellicourt, France, Sept. 29, 1918. After being knocked unconscious into a shell hole, and although suffering acutely from the shock, Lieutenant Morison rejoined his company and continued to care for the wounded in the open and under intense shell fire. His respirator having been blown away by the exploding shell, this mission was rendered much more precarious by enemy gas shells. He remained at his first-aid station through an intense barrage which killed several of the stretcher bearers and helpers at this point, evacuating the wounded with great rapidity until he was severely wounded and forced to be evacuated.

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[1] MacCallum, W. G.: A Textbook of Pathology, 1918, p. 128.

[2] Segàle, M.: The Temperature of Acutely Inflamed Peripheral Tissue, J. Exper. Med. **29**: 235, 1919.

LESTER L. PRATT, passed asst. surg., U. S. Navy. For extraordinary heroism in action in the Bois de Belleau, France, June 11, 1918. Although he had been wounded under the left eye, almost blinded by gas fumes, and his dressing station wrecked by shell fire, Surgeon Pratt remained at his post working under the most trying conditions until all the wounded had been safely evacuated.

ORLANDO H. PETTY, passed asst. surg., U. S. Navy, Philadelphia, Pa. For extraordinary heroism in action near Bucy, France, June 11, 1918. While Surgeon Petty was treating wounded under bombardment of gas and high explosive shells he was knocked down and his gas mask torn by a bursting gas shell, but he discarded his gas mask and continued his work. Later, when his dressing station was demolished by another shell, he helped carry a wounded officer through the shell fire to a place of safety.

FRANK R. WHEELOCK, Capt. M. C., U. S. Army, 313th Infantry, Scranton, Pa. For extraordinary heroism in action near Malancourt, France, Sept. 26-30, 1918. Working in areas that were continually being swept by machine gun, rifle and shell fire, Captain Wheelock worked voluntarily and unceasingly giving aid, food and water to the wounded. Throughout the entire operations Captain Wheelock showed utter disregard for his own safety, being knocked down many times by shell explosions. For two nights he worked as a stretcher bearer, carrying patients to places of safety, after giving them medical attention during the day.

SHADWORTH O. BEASLEY, major, M. C., U. S. Army (deceased), 76th Field Artillery, San Francisco. For extraordinary heroism in action near Les Petit Bordeaux Woods, France, July 14 to 16, 1918. During the entire action, Major Beasley braved the danger of continuous shell fire by constantly searching for wounded and administering treatment.

CONRAD WESSELHOEFT, Capt., M. C., U. S. Army, 102d Infantry, Boston, Mass. For extraordinary heroism in action near Verdun, France, Nov. 8, 1918. Captain Wesselhoeft went forward, under heavy machine-gun fire, to the aid of a wounded soldier. The fire was so heavy that they were compelled to remain in the shell hole until nightfall, when he brought the wounded man to our lines.

JAMES R. LISA, Lieut., M. C., U. S. Army, 105th Infantry, Calumet, Mich. For extraordinary heroism in action near St. Souplet, France, Oct. 18, 1918. After his battalion had been compelled to withdraw because of enfilading fire, Lieutenant Lisa displayed marked bravery in going forward and attending wounded men whose evacuation was impossible because of the intense fire.

THOMAS H. ROYSTER, Lieut., M. C., U. S. Army, 30th Infantry, Tarboro, N. C. For extraordinary heroism in action near Crezancy, France, July 15, 1918. When casualties, during the offensive of July 15, had become so great that it was necessary to work in the open. Lieutenant Royster exposed himself to the severe fire for ten hours, dressing and caring for the wounded.

JOSIAH A. POWLESS, Lieut. M. C., U. S. Army (deceased), 308th Infantry, Oneida, Wis. For extraordinary heroism in action near Chevieres, France, Oct. 14, 1918. When notified that his colleague, Captain James M. McKibben, had been wounded, Lieutenant Powless immediately went forward to his assistance. He crossed an area subjected to intense machine-gun and constant artillery fire, reached his colleague, whose wound proved to be fatal, and, after dressing his wounds, had him carried to the rear. Lieutenant Powless was seriously wounded while performing this service.

WALTER W. MANTON, Capt., M. C., U. S. Army, Detroit, 26th Infantry. For extraordinary heroism in action at Soissons, France, July 18, 1918. Accompanying his battalion in the attack, Captain Manton was with the second wave when he sustained a compound fracture of the right forearm from a bursting shell. He, nevertheless, refused to go to the rear, but remained on duty until the final objective was reached in the afternoon, attending the wounded and directing their evacuation.

DWIGHT DICKINSON, JR., passed asst. surg., U. S. Navy, attached to 2d battalion, 5th regiment, United States Marine Corps. For extraordinary heroism in action near St. Etienne, France, Oct. 4, 1918. Under terrific shell and machine-gun fire, Passed Asst. Surg. Dickinson attended the wounded with utter disregard for his own safety. When a shell struck the dressing station which he had established in an advanced zone, he rushed to the assistance of the wounded, and, through his devotion to duty, many lives were saved.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Anniston—Leyden, H. A. (L.)
Benton—Staggers, W. L. (L.)
Birmingham—Brown, R. T., Jr. (L.)
Jordan, W. M. (M.)
Gadsden—Ison, H. L. (C.)
Huntsville—Bolling, R. W. (M.)
Mobile—Schwarz, J. (C.)
Roebuck Springs—Constantine, K. W. (M.)
Tuscaloosa—Lawrence, T. (C.)
Ward, D. W. (C.)

ARIZONA

Bisbee—Watkins, T. (L.)

ARKANSAS

Barfield—McCall, W. S. (L.)
Fort Smith—Moulton, E. C. (L.)
Mellwood—King, J. A. (L.)
O'Kean—Allen, M. (L.)
Prescott—Antoine, G. W. (L.)
Siloam Springs—Smiley, J. L. (L.)
Struthers, O. C. (L.)
Texarkana—Williams, P. C. (M.)

CALIFORNIA

Artesia—Diehl, E. H. (C.)
Berkeley—Soper, R. W. (C.)
Fallbrook—Graffin, J. C. (C.)
Fort McDowell—Chapman, J. F. (C.)
Grass Valley—Barnes, P. D. (L.)
Long Pine—Williamson, M. A. (M.)
Los Angeles—Brown, F. E. (C.)
Cook, C. W. (C.)
Frost, L. C. (C.)
Hunter, G. G. (C.)
Konantz, O. F. (C.)
Scholz, A. M. (L.)
Stovall, L. (L.)
Thorpe, A. C. (C.)
Toland, C. G. (M.)
White, P. G. (M.)
Whiting, S. B. (M.)
Oakland—Van Nuys, R. G. (L.)
Oroville—Kusel, E. A. (C.)
Pomona—Allen, F. M. (C.)
San Bernardino—Kell, F. B. (L.)
San Francisco—Casper, E. J. (L.)
Fletcher, H. A. (C.)
Frankenheimer, J. B. (M.)
Griner, E. C. (L.)
Horn, H. W. (L. C.)
Ledyard, C. C. (L.)
Montgomery, W. O. (C.)
Nicholls, R. J. (C.)
Patek, R. (C.)
Rosson, R. W. (L.)
Waller, J. L. (C.)
San Jose—Smith, A. S. (C.)
Wayland, C. A. (M.)
Santa Barbara—Chancellor, P. S. (M.)
Santa Rosa—Temple, J. (C.)
Stockton—Dozier, L. (L.)

COLORADO

Alamosa—Orr, C. L. (L.)
Blanca—Covell, W. W. (L.)
Boulder—Spencer, F. R. (C.)
Buena Vista—MacLennan, A. A. (L.)
Canon City—Goodloe, H. (C.)
Carbondale—Tubbs, W. R. (L.)
Denver—Arneill, J. R. (C.)
Bane, W. M. (C.)
Finnoff, W. C. (C.)
Kennedy, J. C. (L.)
Stahl, A. W. (C.)
Williams, W. W. (M.)
Glenwood Springs—Frank, W. W. (C.)
Greeley—Broman, O. F. (M.)
Longmont—Pennock, V. R. (L.)

CONNECTICUT

Bridgeport—Cheney, M. L. (L.)
Scrimgeour, A. (C.)
Canaan—Adam, J. G. (C.)
Essex—Bradeen, F. B. (L.)
Hartford—Dwyer, R. J. (C.)
Rowley, A. M. (M.)
Litchfield—Page, C. I. (C.)
Meriden—Quinlan, R. V. (C.)
Wheatley, L. F. (C.)
Middletown—King, E. H. (C.)
New Canaan—Clark, F. F. (L.)
New Haven — Comstock, F. W. (C.)
Marantz, B. C. (L.)
Suffield—Street, R. B. (L.)
Terryville—Woodward, H. B. (C.)
Waterbury—Coyle, W. E. (L.)

DELAWARE

Selbyville—James, G. E. (L.)
Wilmington—Beeler, B. H. (L.)

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Poole, T. A. (L.)
Ridgeley, A. (C.)

FLORIDA

Alton—Baker, W. J. (C.)
Jacksonville—Cason, T. Z. (C.)
Jennings, C. L. (C.)
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Oakland—Auweds, F. J. (L.)
Pensacola—Lischkoff, M. A. (L.)
Tampa—Jones, T. R. (C.)

GEORGIA

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Atlanta—Brewer, W. C. (L.)
Giddings, C. G., Jr. (C.)
Mashburn, C. M. (L.)
Raiford, F. P. (L.)
Smith, A. (L.)
Summerall, W. B. (M.)
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College Park—Foster, K. E. (L.)
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Harlem—Martin, A. B. (C.)
Hartwell—McCurry, W. E. (C.)
Lawrenceville—Hinton, C. (L.)
Marietta—Benson, W. E. (L.)
Milledgeville—Little, Y. A. (C.)
Monroe—Swann, W. K. (C.)
Rome—Smith, G. B. (C.)
Savannah—Bray, S. E. (L.)
Middleton, C. C. (C.)
Morrison, J. E. (L.)
Thomasville—Moore, H. M. (C.)
Toccoa—Ayers, C. L. (L.)
Waycross—Nesbit, F. C. (L.)
Williamson — Beauchamp, W. L. (L.)

IDAHO

Boise—Tallman, M. H. (C.)
Inkow—Miller, J. F. (C.)
Moscow—Aspray, J. (C.)
Pocatello—Sprague, F. M. (C.)
Jerome—Field, E. H. (C.)

ILLINOIS

Alsey—Bowman, C. S. (L.)
Anchor—Kerr, C. R. (L.)
Bardolph—Hendricks, W. W. (C.)
Belvidere—Andrews, R. B. (L.)
Benson—Cotton, W. C. (C.)
Bloomington — Cantrell, T. D. (C.)
Blue Island—Byford, W. H. (C.)
Canton—Hays, V. (L.)
Carlyle—Warren, W. O. (L.)
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Adkins, R. E. (C.)
Brown, R. C. (L. C.)
Brust, E. G. (L.)
Cary, F. S. (C.)
David, V. C. (L. C.)
Eterno, J. (L.)
Gatewood, L. C. (M.)
Gier, M. A. (C.)
Higginson, J. (C.)
Hills, L. H. (L.)
Ingram, M. I. (L.)
Jeffrey, C. W. (L.)
Kail, J. W. (L.)
Koursoumis, C. J. (L.)
Kraft, J. C. (M.)
Krasa, J. C. M. (C.)
Kropacek, J. A. (L.)
McNertney, F. D. (L.)
Metz, A. R. (C.)
Miller, J. L. (L. C.)
Mueller, E. W. (L.)
Musselman, G. H. (M.)
Myers, J. (C.)
Newman, L. (L.)
O'Connell, J. C. (L.)
Patejdl, J. (L.)
Pitte, C. E. (L.)
Porges, I. A. (L.)
Quitmeyer, J. C. (L.)
Reinhart, M. D. (L.)
Seidler, L. (L.)
Solem, G. O. (L.)
Welch, W. T. (L.)
Woolston, W. H. (L.)
Fairmont—Sherman, R. N. (L.)
Farmingdale — Lutyens, H. E. (L.)
Flat Rock—Highsmith, L. B. (L.)
Gibson City—Lane, R. N. (C.)
Grayville—Allison, H. Q. (L.)
Martin, H. B. (L.)
Harvard—Knauf, A. R. (L.)
Jacksonville—Crouch, E. L. (L.)
Jerseyville — Threlkeld, H. F. (L.)
Lincoln—Dyer, W. H. (L.)
Gaffney, E. C. (M.)
Mackinaw—Fast, H. D. (L.)
Moline—Wessel, P. H. (L.)
Newman—Swickard, C. D. (L.)
Oak Park—Van Derslice, J. W. (C.)
Ottawa—Nicoll, H. K. (M.)
Peoria—Bacon, J. H. (C.)
Pinckneyville—Hiller, F. B. (L.)
Pleasant Hill — Turner, J. W. (M.)
Pontiac—Middleton, A. B. (C.)
Rockford—Rundquist, E. M. (C.)
Rock Island—Mueller, A. N. (L.)
Shattuc—O'Neal, O. (C.)
Springfield—Taylor, P. L. (C.)
Sterling — McCandless, W. H. (L.)
Sumner—Green, W. I. (L.)
Varna—Schwambach, L. (L.)
Wilmette—Mellinger, H. V. (L.)

INDIANA

Atwood—Cripe, E. J. (L.)
Beech Grove—Butler, R. A. (L.)
Clay City—Brown, A. S. (L.)
Cumberland—Young, J. B. (C.)
Decker—Small, E. F. (L.)
East Enterprise—Hall, W. M. (L.)
East Haven—Craig, J. S. (C.)
Evansville—Laubscher, S. R. (C.)
Thompson, H. R. (L.)

Indianapolis—Cratt, K. L. (L.)
Guedel, A. E. (C.)
Kiser, E. F. (C.)
Newcomb, J. R. (M.)
Jeffersonville—Peyton, D. C. (M.)
Kempton—Dunham, W. F. (L.)
Kokomo—Marshall, G. D. (L.)
Lafayette—Brockway, C. J. (L.)
Swezey, H. N. (C.)
Marion—Rogers, J. E. (L.)
Muncie—Green, E. S. (M.)
Patricksburg — Richards, R. H. (C.)
Rensselaer—Washburn, I. M. (C.)
Richmond—Smelser, S. G. (L.)
Roann—Kidd, J. G. (C.)
Sidney—Garber, P. A. (L.)
Terre Haute—Gillum, J. R. (C.)
Pierce, H. J. (L.)
Vincennes — Johnson, M. H. C. (L.)
Waterloo—Ish, E. A. (C.)
West Lebanon—Johnson, E. E. (L.)
Zanesville—Murray, R. V. (C.)

IOWA

Adair—Winnett, J. R. (L.)
Cedar Rapids—Skinner, C. G. (C.)
Clarinda—Sherman, A. M. (C.)
Council Bluffs — Maiden, S. D. (C.)
Cresco—Plummer, G. A. (C.)
Decorah—Hexom, J. D. (L.)
Des Moines—Booker, A. J. (L.)
Dubuque—Mahoney, D. L. (L.)
Kellogg—Hanna, J. T. (L.)
Keokuk—Day, J. M., Jr. (L.)
Larchwood—Druet, A. L. (L.)
Nevinville—Miller, C. A. (L.)
Oskaloosa—Roberts, J. G. (C.)
Sidney—Lovelady, R. (L.)
Tabor—Miller, B. B. (L.)
Wesley—Carmody, T. J. (L.)

KANSAS

Erie—Henderson, R. C. (C.)
Jennings—Hardesty, H. O. (L.)
Ness City—Fleming, W. S. (L.)
Norton—Tinney, R. M. (L.)
Parsons—Nash, A. R. (C.)
Peabody—Prather, B. T. (L.)
Raymond—Fisher, L. S. (L.)
Seneca—Snyder, H. G. (C.)
Troy—Gartner, W. A. (M.)
Wichita—McKinlay, C. A. (L.)

KENTUCKY

Auxier—Archer, E. E. (C.)
Cadiz—Champion, L. (C.)
Chesnutburg—Morris, J. M. (C.)
Covington—Ranshaw, W. H. T. (C.)
Fort Thomas—Sanchez, B. H. (L.)
Lexington—Estill, R. J. (L. C.)
Louisville—Davidson, H. A. (C.)
Falconer, A. H. (L.)
Lucas, C. G. (M.)
Price, J. W. (M.)
Pritchett, J. H. (L.)
Newport—Phythian, J. L. (C.)
Paducah—Lackey, W. A. (C.)
Somerset—Norfleet, C. (C.)

LOUISIANA

Alexandria—Cappel, J. T. (M.)
Lake Providence—Evans, W. K. (L.)
Leesville—Willis, D. O. (C.)
New Orleans—Cronan, G. A. (L.)
DeReyna, G. J. (L.)
Dunn, J. S. (L.)
Gelpi, M. J. (L.)
Napoleonville—Pugh, W. W. (L.)
Shreveport—Frater, F. J. (C.)
Lloyd, T. P. (L. C.)
Rutledge, C. P. (C.)
Wallace, W. (L.)

MAINE

Bangor—Pastor, L. M. (C.)
Brunswick—Stetson, E. G. A. (L.)
Dixfield—Sturtevant, J. M. (L.)
Lewiston—Haskell, W. L. (M.)
North Anson — Marston, H. E. (L.)
Portland—Webber, M. C. (C.)
Union—Hadley, L. W. (L.)

MARYLAND

Baltimore—Bordley, J., Jr. (L.C.)
Brown, N. W. (C.)
Davis, E. G. (L.)
Harrell, B. E. (L.)
Lichtenberg, M. L. (L.)
Pruitt, S. O. (C.)
Reik, A. J. N. (M.)
Smith, W. H. (Col.)
Bivalve—Caldwell, R. E. (C.)
Cumberland—Sharrett, G. O. (C.)
Hagerstown—Wroth, P. (C.)
Midland—Charles, F. H. (L.)
Perryman—Stier, J. H. (C.)

MASSACHUSETTS

Allerton—Sturgis, W. H. (M.)
Boston—Balch, F. G. (L. C.)
Bartlett, W. B. (L.)
Cushing, H. (Col.)
Hatch, R. A. (C.)
Martin, J. F. (L.)
Mason, G. M. (C.)
Medlar, E. M. (L.)
Mosher, H. P. (L. C.)
Robey, W. H., Jr. (L. C.)
Rockwell, L. H. (L.)
Roderick, C. E. (L.)
Thurber, D. P. (L.)
Washburn, F. A. (Col.)
Bridgewater—Carr, A. W. (C.)
Brockton—Miles, C. G. (L.)
Brookline—Boutwell, H. K. (C.)
Dorchester—Hardwick, E. V. (C.)
Fall River—Dedrick, A. C. (C.)
Truesdale, P. E. (M.)
Gardner—Sawyer, E. J. (L.)
Holyoke—Knowlton, E. A. (C.)
Lowell—Delaney, T. B. (L.)
Dursthoff, L. C. (L.)
Lynn—Hartman, G. (C.)
Marblehead—Peck, M. W. (L.)
Melrose—Small, A. E. (C.)
Nantucket—Lewis, F. E. (C.)
New Bedford — Hathaway, J. G. (C.)
Stetson, F. E. (C.)
Oxford—Fletcher, R. S. (L.)
Quincy—Bushnell, E. H. (C.)
Rockland—Colgate, C. H. (C.)
Springfield—Boyer, J. N., Jr. (C.)
Davis, E. L. (M.)
Wellesley—Coleman, D. B. (L.)
Westboro—Newton, R. S. (C.)
Westfield—Harkins, C. P. (C.)
West Medway—Butler, S. (L.)
Weston—Orr, S. S. (C.)
Worcester—Clark, W. I. (C.)
George, F. W. (L. C.)
Gilfillan, D. R. (M.)
Thom, D. A. (C.)

MICHIGAN

Ann Arbor—Emerson, H. W. (C.)
Bay City—Brown, F. W. (C.)
Calumet — MacNaughton, P. D. (L. C.)
Detroit—Boonstra, R. F. (L.)
Connor, R. (C.)
Corbett, B. F. (L.)
Ensor, R. P. (L.)
Gaines, C. B. (C.)
Larsson, B. H. (C.)
Parker, W. R. (Col.)
Shurly, B. R. (L. C.)
Grand Rapids—Campbell, A. M. (M.)
Deaver, C. W. (L.)
Whinery, J. B. (M.)
Greenland—Evans, E. J. (C.)
Greenville—Bower, A. J. (M.)
Hartford—Stewart, J. D. (C.)
Ionia—McCann, J. J. (L.)
Iron Mountain—Anderson, W. J. (C.)
Jackson—Brown, H. D. (M.)
Enders, W. H. (C.)
Lansing—Cochrane, W. A. (L.)
Richmond—Greene, I. W. (L.)
Saginaw—Meyer, H. J. (C.)
Three Rivers—Scidmore, A. W (C.)
Vestaburg—Hubbard, M. C. (L.)

MINNESOTA

Minneapolis—Baker, L. (L.)
Burns, H. A. (C.)
Keene, C. H. (M.)
Koller, L. R. (L.)
Paulson, C. W. (C.)
Shapiro, M. J. (L.)
Ulrich, H. L. (C.)
Newfolden—Johnson, G. L. (L.)
Rochester—Black, S. O. (L.)
Mattson, W. W. (L.)
Rosemount—Schatz, F. J. (L.)
Silver Lake—Trutna, T. J. (L.)
St. Paul—Ball, C. R. (C.)
Cook, P. B. (M.)

MISSISSIPPI

Biloxi—McWilliams, C. A. (L.)
Brookhaven — Arrington, O. N. (C.)
Hattiesburg — Crawford, W. W. (L. C.)
Jackson—Fox, J. H. (C.)
Jefferson City—Moore, I. E. (L.)
McComb—Otken, L. B. (C.)
Natchez—Trice, J. L. (L.)
Sherard—Rawles, E. L. (L.)
Sunflower—Higdon, B. H. (L.)
Vicksburg—Street, A. (L.)

MISSOURI

Bellflower—Rutherford, O. L. (L.)
Belton—Fair, S. W. (L.)
Bowling Green—Biggs, J. B. (L.)
Cameron—Peters, M. L. (C.)
Cape Girardeau—Wilson, E. H. G. (C.)
Clarksville—Bartlett, E. M. (C.)
Dunnegan—Hahn, C. N. (L.)
Eldon—Allee, W. L. (L.)
Excelsior Springs—O'Kell, O. C. (C.)
Farmington—Tate, P. S. (C.)
Gower—Reynolds, S. D. (C.)
Holden—Thompson, W. G. (L.)
Kansas City—Altringer, A. N. (L.)
Binnie, J. F. (L. C.)
Cohn, A. R. (L.)
Cooper, G. F. (L.)
Goldman, A. M. (L.)
Mark, E. G. (M.)
Stadler, S. A. (L.)
Underwood, R. H. (L.)
Valentine, H. S. (C.)
Lexington—Downing, J. L. (C.)
Lincoln—Jones, W. G. (C.)
Memphis—Platter, A. E. (L.)
Osgood—Weston, U. C. (C.)
Pleasant Hill—Yeagle, R. P. (M.)
Princeton—Bristow, A. S. (L.)
Raymore—Chaffin, W. F. (L.)
Richland—Monday, L. R. (L.)
Rushville—Spencer, C. (L.)
Sedalia—Morley, F. R. (C.)
Sheldon—Boone, J. L. (C.)
St. Joseph—Ladd, F. H. (C.)
Strawn, E. Y. (L.)
St. Louis—Froelich, E. J. (L.)
Harney, L. G. (L. C.)
Lund, H. G. (C.)
McGarry, R. A. (C.)
McMahon, B. J. (L.)
Murphy, J. C. (C.)
Noll, E. A. (L.)
Schwab, S. I. (M.)
Vosburgh, C. A. (M.)
Wiener, M. (M.)

MONTANA

Boseman—Judd, H. H. (C.)
Butte—Schwartz, S. E. (C.)
Great Falls—Titus, C. I. (C.)
Woodward, F. A. (L.)

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Blair—Killan, L. J. (L.)
Columbus—Evans, C. D. (L.)
Dawson—Kelly, J. F. (C.)
Falls City—Lang, O. F. (C.)
Fullerton—Hall, R. E. (C.)
Grand Island — Redfield, W. J. (M.)
Greenwood — McFadden, H. W. (L.)
Lincoln—Howard, P. R. (M.)
Swartwood, F. M. (L.)
Lyons—Devers, W. I. (C.)
Omaha—Fricke, A. A. (M.)
Moser, R. A. (C.)
Rosalie—McCarl, J. J. (L.)
Schuyler—Painter, J. C. (C.)
Scotts Bluff—Jones, L. (C.)
Schrock, J. B. (L.)
Superior—Trowbridge, J. A. (C.)

NEVADA

Winnemucca—Pope, G. F. (L.)

NEW HAMPSHIRE

Portsmouth—Tredick, G. A. (L.)

NEW JERSEY

Asbury Park—Oliver, H. J. (L.)
Audubon—Dean, H. B. (C.)
Belleville—Winans, J. C. (L.)
Cape May—Draper, E. A. (L.)
East Orange—Livingston, P. (L.)
Neare, C. R. (C.)
Elizabeth—Quinn, S. T. (M.)
Harrison—Kummel, M. (L.)
Jersey City—Birdsall, C. A. (L.)
Morristown—Smith, M. K. (L.)
Newark—Dowd, A. F. (C.)
Janifer, C. S. (C.)
Swain, R. D. (L.)
Ocean Grove—Ehlers, R. G. M. (L.)
Paterson—Greengrass, J. J. (L.)
Was, F. J. T. (L.)
Perth Amboy—Mann, J. J. (L.)
Plainfield—Hubbary, H. V. (C.)
Summit—Keeney, C. B. (L.)
Trenton—Funkhouser, E. B. (L.)
Westfield—Laird, G. S. (L.)

NEW MEXICO

Carlsbad—Lackey, J. W. (C.)
Mesilla Park—Carter, G. D. (C.)

NEW YORK

Albany—Dunlop, L. L. (L.)
Hawn, C. B. (M.)
Judge, H. V. (C.)
Van Rensselaer, H. (C.)
Albion—Cooper, D. G. (L.)
Brewster—Richie, E. R. (L.)
Brooklyn—Berlucci, W. G. (C.)
Blumenthal, S. J. (L.)
Bruno, J. M. L. (L.)
Freiman, G. (L.)
Holden, N. M. (C.)
Langer, H. L. (L.)
Lehman, P. (L.)
Schelling, H. L. (M.)
Shumway, S. O. (L.)
Thompson, J. E. (C.)
Wolfson, W. L. (L.)
Zeman, F. D. (L.)
Buffalo—Burns, T. C. (C.)
King, R. (C.)
Mangano, J. L. (L.)
McDonald, H. J. (L.)
O'Gorman, F. M. (C.)
Stowe, J. G. (C.)
Trick, H. R. (C.)
Cameron Mills—Goff, A. P. (C.)
Canaseraga—Mayhew, R. H. (L.)
Canastota—DeForest, C. M. (L.C.)
Elmira—Jones, F. H. (C.)
Fordham—Arnold, M. W. (L.)
Gosham—Allen, L. F. (L.)
Great Kills—Presley, E. W. (L.)
Hamoroneck—Tierney, M. J. (C.)
Ithaca—Unger, I. M. (L. C.)
Katonah—MacPhail, J. A. (L.)
Long Island City—Twist, E. A. (L.)
Mount Vernon — Kenna, W. M. (C.)
New York—Aycock, W. L. (L.)
Bendick, A. J. (C.)
Butler, W. E. (L. C.)
Callan, L. W. (C.)
Carlin, R. G. (C.)
Celler, H. L. (L. C.)
Clark, G. A. (L.)
Cohen, I. (C.)
Collins, H. D. (M.)
Dunham, H. G. (C.)
Edelman, L. (L.)
Farrell, J. R. (C.)
Ferry, R. M. (L.)
Funsten, R. V. (L.)
Furniss, H. D. (C.)
Hubby, L. M. (M.)
Hutton, L. (L. C.)
Ivez, F. M. (C.)
Krug, E. F. (M.)
Lattin, B. (C.)
Luckett, W. H. (M.)
MacDonald, W. C. (L.)
McCafferty, J. A. (C.)
Meyer, L. B. (M.)
Miller, J. D. (C.)
Mixsell, H. R. (L.)
Montgomery, W. C. (Col.)
Moorhead, J. J. (L. C.)
Neff, L. K. (Col.)
Oberdorfer, A. L. (L.)
Oliver, W. W. (L.)
Oppenheimer, E. D. (L.)
Roberts, P. W. (C.)
Salisbury, L. A. (L. C.)
Shank, E. W. (C.)
Sinclair, D. A. (L. C.)
Stone, H. R. (C.)
Sweeney, M. J. (L.)
Thornton, M. J. (L. C.)
Weinberg, A. (L.)
Whitney, C. F. S. (L. C.)
Zinsser, H. (Col.)
Niagara Falls—Sharp, J. P. (L.)
Old Chatham—Southworth, H. M. (C.)
Olean—Morris, R. B. (L.)
Otego—Cooke, W. S. (C.)
Otisville—Lynch, R. J. (L.)
Poughkeepsie—Davis, H. W. (L.)
Krieger, W. A. (L.)
Parsons, F. W. (L. C.)
Pyrites—Sullivan, M. F. (L.)
Ravena—Post, R. B. (L.)
Rochester—Auwers, F. J. (L.)
Baldwin, F. B. (M.)
Boddy, E. C. (C.)
Elliott, R. E. (L.)
Ingersoll, E. S. (M.)
Parker, P. M. (C.)
Sayres, C. O. (C.)
Wooden, W. (C.)
Rosebank—Lee, F. P. (L.)
Saratoga Springs—Ledlie, J. B. (C.)
Schenectady—Clowe, G. M. (C.)
Schuylerville—Callahan, E. J. (C.)

Setauket—Darlington, G. C. (C.)
Staten Island—Sparck, J. (C.)
Strong Point—Hurd, R. A. (L.)
Syracuse—Lewis, G. R. (C.)
Utica—Dill, G. H. (C.)
Ward's Island—Kirby, G. H. (M.)
Webster—Stanton, W. (M.)
White Plains — Chapman, L. B. (M.)
Ross, D. L. (M.)
Yonkers—Stearns, W. W. (C.)

NORTH CAROLINA

Asheville—Battle, G. C. (L.)
Bladenboro—Sadler, R. C. (L.)
Durham—Woodard, C. A. (M.)
Franklin—Williams, N. G. (L.)
Franklinton—King, M. C. (L.)
Goldsboro—Strosnider, C. F. (L.)
Greensboro—Thomas, J. G. (C.)
Henderson—Bryant, W. H. (L.)
Lillington—Arnold, L. J. (C.)
Raleigh—Vass, R. S. (C.)
Roxboro—Long, W. T. (L.)
Wilmington—Scott, E. T. (L.)

NORTH DAKOTA

Dickinson—Long, W. H. (C.)
McVille—Heron, R. C. (L.)
Underwood—Tyrrell, J. B. (L.)
Williston—Strong, T. J. (M.)

OHIO

Akron—Pinkerton, C. C. (L.)
Alger—Talbott, J. E. (L.)
Bellefontaine—Swan, G. H. (C.)
Bloomdale—Sheldon, E. (L.)
Canton—Hamilton, C. D. (C.)
Cincinnati — Bachmeyer, A. C. (M.)
Gaston, R. E. (L.)
Holmes, C. R. (M.)
Ransohoff, J. L. (M.)
Cleveland—Evans, S. W. (C.)
Furrer, A. F. (C.)
Garvin, C. H. (C.)
Goff, W. R. (L.)
Rosewater, E. D. (L.)
Burstein, T. R. (L.)
Shupe, T. P. (C.)
Walker, T. E. (M.)
Columbus—Fenker, T. E. (M.)
Shoemaker, A. J. (L.)
Snyder, G. H. (L.)
Delta—Wilkins, A. M. (C.)
Edon—Brandon, E. F. (L.)
Fayette—Reynolds, R. W. (L.)
Lisbon—Maxwell, H. S. (C.)
Londonville—Heyde, J. M. (C.)
Portage—Fisher, E. W. (C.)
Port Clinton—Van Epp, O. B. (C.)
Sandusky—Southwick, P. F. (L.)
Shadyside—Berry, J. C. (L.)
Sidney—LeMaster, V. W. (L.)
St. Marys—Noble, H. S. (C.)
Stryker—Goll, C. G. (L.)
Toledo—Hein, B. J. (C.)
Seybold, N. J. (L.)
Urbana—Houston, M. C. (L.)
Youngstown—Brant, A. E. (M.)
Cameron, R. L. (C.)
McCurdy, S. M. (C.)
Osborne, H. M. (M.)

OKLAHOMA

Adamson—Brunson, C. J. (L.)
Centrahoma—Nelson, I. A. (L.)
Edmond—Flesher, T. H. (C.)
Healdton—Sims, C. C. (L.)
Hobart—Leverton, W. R. (L.)
Lloyd, H. C. (C.)
Muskogee—Brown, B. H. (M.)
Harris, J. G. (C.)
Norman—Boyd, T. M. (L.)
Hargrove, R. M. (L.)
Okarche—Brown, H. C. (C.)
Oklahoma City—Davenport, A. E. (M.)
Field, C. H. (L.)
Howard, M. O. (L.)
Lauderdale, T. L. (L.)
White, A. W. (C.)
Sallisaw—Wood, T. F. (C.)
Tulsa—Lemmon, W. G. (L.)
Smitherman, J. (L.)
Vinita—Hays, P. L. (L.)
Westville—Beard, D. A. (L.)

OREGON

Baker—Higgins, T. J. (C.)
Eugene—Fields, R. H. (C.)
Waller, A. O. (L.)
Portland—Cramer, I. H. (C.)
McCool, J. L. (C.)
McDaniel, R. C. (L.)
Sabin, C. G. (C.)

PENNSYLVANIA

Abington—Baer, H. A. D. (L.)
Allentown—Butz, W. H. (L.)
Berlin—Boyer, S. P. (L.)
Bradford—Paton, F. W. (L.)
Bryn Mawr—Reynolds, D. D. (L.)
Carnegie—Cotton, T. I. (C.)
Chambersburg—Gelwix, J. M. (C.)
Stofer, M. W. (L.)
Chester—Eynon, J. S. (C.)
Wood, J. W. (C.)
Coatesville—Hinkson, D. (L.)
Cresson—Turnbull, W. G. (M.)
Danville—Struthers, J. E. (C.)
Devon—Laird, J. P. (C.)
I. C. (L.)
E. (L.)
H. H. (L.)
V. E. (L.)
L. (L.)
Harrisburg—Arnold, J. L. (L.)
Johnstown—Lowman, J. B. (L. C.)
Lubken, W. O. (L.)
Kingston—Rogers, L. L., Jr. (L.)
Lansford—Quinn, J. J. (L.)
Lock Haven — Critchfield, J. B. (L.)
Mars—Seifries, A. F. (L.)
McKeesport—Ord, E. Y. (C.)
Meadville—Gaston, A. H. (L.)
Minersville—Straub, H. G. (L.)
Monessen—Sloterbeck, E. B. (L.)
Morgantown—Zook, J. A. (L.)
New Castle—McCune, S. R. W. (L.)
Norristown—Simpson, J. C. (C.)
Wolfe, J. R. V. (M.)
Palmerton—Batchelor, R. P. (L.)
Philadelphia—Bogia, R. A. (C.)
Brown, G. A. (L.)
Burns, S. C. (M.)
Cruice, J. M. (M.)
Daly, W. J. (C.)
Daniels, C. D. (L.)
Druce, T. W. (C.)
de Schweinitz, G. D. (L. C.)
Fife, C. A. (M.)
Fraley, F. (L.)
Guistwhite, B. H. (L.)
Hauck, W. H. (L.)
Hollis, C. B. (C.)
Hustead, F. H. (C.)
Kessler, W. C. (C.)
Kitchin, E. P. (L.)
Knox, A., Jr. (C.)
Leavitt, F. H. (C.)
Lewis, D. W. (L.)
McCloskey, J. F. (M.)
McCombs, R. S. (M.)
Munson, H. G. (C.)
Poulson, W. W. (L.)
Sheaff, P. A. (M.)
Skillern, R. H. (L. C.)
Smith, A. J. (M.)
Weisenburg, T. H. (M.)
Wilson, S. M. (L.)
Pittsburgh—Bailey, F. R. (L.)
Barndollar, W. P. (L. C.)
Curll, C. L. (M.)
Fulton, L. C. (C.)
Hammett, J. M. (L.)
Katzenstein, M. B. (M.)
Kenworthy, F. (C.)
Meanor, W. C. (M.)
Utley, F. B. (M.)
Walls, E. S. (L.)
Weiner, B. (L.)
Pottstown—Cooley, D. B. (L.)
Reading—Essick, C. R. (C.)
Hawman, E. G. (L.)
Scranton—Gibbons, L. P. (L.)
Sullivan, J. J. (C.)
Sewickley—Nettleton, D. B. (M.)
Wallingford—Miller, C. W. (M.)
Webster—Byers, W. C. (L.)
West Chester—Strode, G. K. (C.)
Wilkes-Barre — McHugh, P. F. (L.)
Williamsport—Spencer, R. C. (L.)
York—Read, H. M. (L.)

RHODE ISLAND

Providence—Fisher, A. A. (M.)
Fulton, F. T. (M.)
O'Rourke, C. B. (L.)
Ruggles, A. H. (M.)
Scanlan, T. F. (M.)

SOUTH CAROLINA

Anderson—Pruitt, H. A. (L.)
Charleston—Boone, L. D. (L.)
Columbia—Nelson, G. K. (L.)
Florence—Wilson, R. J. (L.)
Greenville—Earle, C. B. (M.)
Walker, T. O. (L.)
Greenwood—Blake, C. H. (L.)
Marion—Dibble, E. M. (L.)
Sumter—Felder, W. W. (L.)

SOUTH DAKOTA

Aberdeen—Farrel, W. D. (C.)

TENNESSEE

Brownsville—Gloster, C. M. (L.)
Sevier, C. E. (C.)
Chattanooga—Hochstetter, E. R. (M.)
Mahan, H. P. (L.)
Gleason—Jeter, J. E. (C.)
Jackson—Granberry, D. B. (L.)
Knoxville—DePue, R. V. (L.)
Jones, T. A. R. (C.)
Memphis—Cooper, A. F. (L.)
Coppedge, T. N. (L.)
King, C. C. (L.)
Mitchell, E. D. (C.)
Sheffield, G. T. (L.)
Murfreesboro—Goodloe, A. E. (C.)
Robison, W. T. (L.)
Nashville—Brew, J., Jr. (C.)
Sewanee—Lear, A. L. (M.)
Union City—Carlton, J. D. (L.)

TEXAS

Alvord—Walker, J. H. (L.)
Anson—McCreight, W. J. (L.)
Beaumont—Wallace, J. C. (L.)
Belton—Mayo, O. N. (L.)
Brenham—Nicholson, R. E. (C.)
Calvert—McDonald, A. A. (L.)
Castell—Huff, O. (L.)
Corsicana—Bowmer, O. C. (C.)
Dallas—Brannin, E. B. (L.)
Walcott, H. G. (C.)
El Paso—Montenyohl, E. A. (L.)
Talley, O. H. (L.)
Wood, V. V. (L.)
Galveston—McGlumphy, C. B. (C.)
Gonzales—Dorsett, T. (M.)
Graham, G. (C.)
Haskell—Cain, S. G. (L.)
Longview—Adams, C. C. (L.)
Pleasanton—Ricks, G. N. (C.)
San Antonio—Caldwell, H. (C.)
Dinwiddie, R. L. (L.)
McDonald, J. E. (L.)
Yeager, C. P. (L.)
Southmayd—Russell, B. A. (L.)
Texas City — Norman, S. (M.)
Waco—Colgin, I. E. (L.)
Manney, J. E. (C.)
Weatherford—Leach, A. F. (L.)
Whitt—Foster, E. C. (C.)
Yoakum—Dufner, C. T. (L.)

UTAH

Lehi—Hanks, G. W. (L.)
Salt Lake City—Fisher, R. W. (C.)
Hammond, E. D. (C.)
Hampton, R. R. (M.)
Light, G. A. (L.)

VERMONT

Brandon—Cray, E. J. (L.)
Enosburg Falls—Thomas, R. B. (C.)
Randolph—Angell, F. C. (M.)
Washington—Hutchinson, W. O. (C.)
West Derby—Somers, H. E. (L.)

VIRGINIA

Avon—Hubbard, J. F. (L.)
Beverlyville—Hudnall, R. L. (L.)
Broadford—Holmes, E. A. (L.)
Chilhowie—Cole, D. B. (L.)
Danville—Robinson, J. M. (C.)
Lynchburg—Hamner, G. P. (C.)
Rucker, T. E. (C.)
Wilson, A. L. (C.)
Pulaski—Dyer, C. E. (L.)
Richmond—Logan, F. W. H. (L.)
Redwood, F. H. (C.)
Roanoke—Cary, S. B. (L.)
Staunton—Thomas, G. H. (C.)
Virginia Beach—Woodhouse, R. W., Jr. (L.)

WASHINGTON

Bellingham—Howe, S. S. (C.)
Centralia—Smith, W. A. (C.)
Elberton—Van Kirk, A. W. (C.)
Everett—Duryee, A. P. (C.)
Fallbridge—Barteau, F. L. (L.)
Seattle—Baumgarton, R. C. (L.)
Cowan, C. B. (L.)
Eaton, C. E. (C.)
Knott, H. J. (C.)
Stith, R. M. (C.)
Spokane—Lupton, E. A. (C.)
Wheeler, H. E. (C.)
Tacoma—Hough, W. J. (L.)
Kane, J. P. (C.)
Pascoe, C. S. (L.)
Rich, E. A. (M.)
Waitsburg—Carver, F. H. (L.)
Mount, H. A. (C.)

WEST VIRGINIA

Elkins—Laws, C. H. (L.)
Fairmont—Keister, H. S. (L.)
Grafton—Bucklew, E. R. (C.)
Huntington—Buckner, C. M. (L.)
Vest, W. E. (C.)
L. (L.)
T. J. (C.)
L. (L.)

WISCONSIN

Bloomington—Heraty, J. E. (C.)
Clinton—Parker, A. S. (C.)
Crandon—Decker, C. O. (C.)
Eau Claire—Flynn, L. H. (L.)
Grantsburg—Kyllo, A. L. (L.)
Green Bay—DePierre, A. (C.)
Hortonville—Rideout, M. E. (C.)
Jefferson—Brewer, J. C. (L.)
Marinette—Heim, R. R. (C.)
Milwaukee—Fitzgerald, G. M. (L.)
Hake, C. B. (L.)
Herner, W. L. (L.)
McNaughton, W. T. (L.)
Senn, U. (C.)
Sickels, W. A. (L.)
Smith, E. A. (C.)
Smith, J. W. (C.)
Stolz, C. E. (L.)
Tharinger, E. L. (C.)
New Holstein—Berger, A. J. (C.)
Oshkosh—Brockway, F. (C.)
Park Falls—Nelson, O. A. (C.)
Sun Prairie—Rueth, J. E. (C.)
Wabeno—Reddick, G. H. (L.)
Wauwatosa—Bennett, J. F. (C.)
Wittenberg—Thompson, J. B. (C.)

WYOMING

Crosby—Giddings, A. M. (L.)
Sheridan—Steffen, W. A. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

ARIZONA

Morenci—Charlton, C. E.

CALIFORNIA

Los Angeles—Saphro, V. O.
Vallejo—Hogan, J. J.

ILLINOIS

Arlington—Malloy, F. V.

IOWA

Knoxville—Trimmer, F. M.

MAINE

Norway—Avery, W. J.

MASSACHUSETTS

Melrose—Flanders, W. H.
Newton—Chamberlin, H. A.

MINNESOTA

St. Paul—Rivers, A. B.

MISSOURI

Ardrick—Cowan, R. D.

NEW JERSEY

Belleville—Runyan, W. J.

NEW YORK

Brooklyn—Reynolds, H. K.
New York—Strauss, S. G.
Oswego—Elder, G. C.

NORTH CAROLINA

Princeton—Joyner, J. C.

OHIO

Cleveland—O'Brien, H. M.

PENNSYLVANIA

Philadelphia—Daland, J.
Hare, H. A.
Pancoast, H. K.
Penza, J. G.
Pittsburgh—Linn, J. G.

TENNESSEE

Dyer—Sanford, C. H.

WASHINGTON

Seattle—Hooker, S. V. R.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Fort McPherson, Ga., from Camp Dix, Lieut. J. M. WELDON, Tallasee; from Erie, Major W. C. DABNEY, Birmingham.

California

To Boston, Mass., from Lakewood, Capt. B. SMITH, Los Angeles.

To Camp Abraham Eustis, Va., from Camp Dix, Capt. F. C. SHURTLEFF, Los Angeles.

To Camp Lewis, Wash., base hospital, from San Francisco, Major F. R. FAIRCHILD, Woodland.

To Fort Bayard, N. M., from Camp Fremont, Capt. W. STIRLING.

To Fort Douglas, Utah, from San Francisco, Major H. S. KIERSTED, Burlingame.

To report to the commanding general, Southern Department, from Houston, Capt. B. F. SANDOW, Oakland.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Lieut. T. F. MADDEN, Sanger.

To Whipple Barracks, Ariz., from Camp Fremont, Capt. C. E. SIMA.

Connecticut

To Denver, Colo., from Camp Devens, Lieut. H. A. SEIGALL, Hartford.

To Lakewood, N. J., from Meridan, Lieut. J. F. O'BRIEN, Hartford.

Florida

To Camp Grant, Ill., base hospital, from Camp Dix, Capt. E. JELKS, Jacksonville.

To Oteen, N. C., from Washington, Major J. D. MacRAE, Tampa.

To Whipple Barracks, Ariz., from West Baden, Capts. E. T. SELLERS, Jacksonville; A. M. AMES, Pensacola..

Georgia

To Arcadia, Fla., Carlstrom Field, from Americus, Lieut. H. T. DOUST.

To Walter Reed General Hospital, D. C., from Camp Dix, Major T. C. DAVISON, Atlanta.

To Whipple Barracks, Ariz., from West Baden, Lieut. H. J. PEAVY, Jr., Byron.

Illinois

To Denver, Colo., from Oteen, Major D. W. YOUNG, Paris.

To Fort Sheridan, Ill., from Camp Dix, Lieut. M. LAMPERT, Chicago; from Camp Travis, Capt. D. N. EISENDRATH, Chicago; from Fort Riley, Capt. C. J. SCHOENFELD, Chicago.

To Walter Reed General Hospital, D. C., from Camp Pike, Lieut. V. P. DIEDERICH, Chicago. For instruction, and on completion *to his proper station*, from Camp Sherman, Capt. C. M. McKENNA, Chicago; from Fort Des Moines, Lieut. G. W. COX, Litchfield; from Fort Sheridan, Lieut. R. A. BUCKNER, Gilman.

Indiana

To Biltmore, N. C., from Camp Lee, Lieut. J. W. THOMSON, Garrett.

To Camp Shelby, Miss., base hospital, from Surgeon-General's Office, Major C. R. SOWDER, Indianapolis.

To Fort Benjamin Harrison, from Camp Abraham Eustis, Major B. VAN SWERINGEN, Fort Wayne.

To Whipple Barracks, Ariz., from West Baden, Lieut. J. W. DUCKWORTH.

Iowa

To Fort Benjamin Harrison, from Camp A. A. Humphreys, Lieut. C. KAIL, Stratford.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from San Francisco, Major T. R. GRIFFIN, Somerset.

Maine

To Army Medical School, D. C., from Boston, Major G. W. PHELAN, Islesboro.

To Camp Meade, Md., base hospital, from Washington, Capt. H. L. WILLIAMS, Auburn.

Maryland

To Camp Devens, Mass., base hospital, from Camp Shelby, Lieut. L. P. HOLMES, Baltimore.

To Camp Meade, Md., to examine the command for cardiovascular diseases, from Camp Sevier, Lieut. F. C. ELEDER, Baltimore.

To Cape May, N. J., from Camp Meade, Lieut. E. G. HALL, Baltimore.

To Fort McPherson, Ga., from Erie, Capt. P. L. TRAVERS, Easton.

To Spartanburg, S. C., from Camp Shelby, Lieut. S. SNYDER, State Sanatorium.

To St. Louis, Mo., from Camp Dix, Capt. W. H. SMITH, Jr., Hagerstown.

To Washington, D. C., from Camp Meade, Lieut. W. P. FINNEY, Jr., Baltimore.

Massachusetts

To Camp Meade, Md., from Boston, Lieut. H. R. WHEAT, Springfield.

To Fort McHenry, Md., from Long Beach, Lieut. J. G. HEGARTY, Boston.

To Lakewood, N. J., from Camp Dix, Lieut. T. B. RAFFERTY, Lynn.

To Otisville, N. Y., from Camp Devens, Col. A. M. SMITH.

To Walter Reed General Hospital, D. C., for instruction, from Lakewood, Capt. T. W. MURPHY, Lawrence.

Michigan

To Aberdeen, Md., from Mineola, Capt. M. J. SCHWANZ, Detroit.

To Denver, Colo., from Fort Snelling, Capt. H. H. RUNO, Detroit.

To Detroit, Mich., from West Baden, Capt. C. B. GARDNER, Alma.

To Fort D. A. Russell, Wyo., from Fort Snelling, Lieut. L. H. TOWER, Battle Creek.

To Fort Des Moines, Iowa, from Camp Dix, Major R. E. BALCH, Kalamazoo.

To Fort Sheridan, Ill., from Camp Lee, Lieut. J. J. DREAK, Detroit.

Minnesota

To Camp Dix, N. J., base hospital, from Fort Riley, Lieut. W. R. WINNE, Rochester.

To Denver, Colo., from Camp Lewis, Capt. T. G. CLEMENT, Vernon Center.

Mississippi

To Camp Meade, Md., from Hampton, Va., Capt. F. C. SMITH, Gloster.

Missouri

To Camp Meade, Md., base hospital, from Army Medical School, Major M. C. STONE, Springfield.

To Camp Travis, Texas, from Surgeon-General's Office, Capt. D. E. SCHMALHORST, St. Louis.

To Fort D. A. Russell, Wyo., from Jefferson Barracks, Lieut. T. E. LILLY, Kansas City.

To New Haven, Conn., from Camp Gordon, Lieut. B. W. LEWIS, St. Louis.

To St. Louis, Mo., from Surgeon-General's Office, Lieut.-Col. V. P. BLAIR, St. Louis.

To Whipple Barracks, Ariz., from West Baden, Capt. L. L. TATE, St. Louis.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. H. E. THOMASON, Kansas City.

Nebraska

To Camp Gordon, Ga., base hospital, from Fort Sill, Capt. K. F. E. WEGENER, Exeter.

To Hoboken, N. J., from Camp Dix, Major R. D. SCHROCK, Omaha.

New Jersey

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. T. S. McCABE, Newark.

New York

To Biltmore, N. C., from Camp Custer, Major C. F. EGGERS, New York.

To Camp Meigs, D. C., to examine the command for mental and nervous diseases, from Washington, Capt. K. A. ENLIND, South Nyack.

To Cape May, N. J., from Camp Meigs, Capt. W. M. KRAUS, New York.

To Colonia, N. J., from Camp Dix, Capt. F. J. A. BENNETT, Auburn.

To Denver, Colo., from New Haven, Major J. W. PRICE, Saranac Lake.

To Fort Hancock, N. J., from Camp Dix, Lieut. A. A. SCHWARTZ, New York.

To Fort McHenry, Md., from Camp Dix, Lieut. E. W. THOMA, Buffalo.

To Fort Ontario, N. Y., from Plattsburg Barracks, Capt. J. F. GILLETTE, New York.

To Fort Sheridan, Ill., from Plattsburg Barracks, Major A. J. ROSANOFF, Kings Park.

To Fox Hills, N. Y., from Camp Dix, Capt. D. B. SINCLAIR, New York; from Camp Meade, Capt. L. P. BERNSTEIN, New York.

To Fox Hills, N. Y., from Camp Dix, Capt. G. F. SAMMIS, Brooklyn; Lieut. W. E. CARROLL, New York.

To Hoboken, N. J., from Camp Meade, Lieut. S. KAHN, New York.

To Hoboken, N. J., from Camp Lee, Lieut. C. GOLDMAN, Brooklyn.

To Mineola, N. Y., from Camp Dix, Major C. BERENS, Jr., New York.

To New Haven, Conn., from Denver, Major J. W. PRICE, Saranac Lake.

To Newport News, from Fort Ontario, Lieut. J. J. LEARY, Utica; from Fox Hills, Lieut.-Col. J. S. FOX; from Surgeon-General's Office, Lieut.-Col. S. BROWN, 2d, White Plains.

To Pig Point, Va., from Surgeon-General's Office, Major C. BREWER, New York.

To Walter Reed General Hospital, D. C., from Rockefeller Institute, Capt. T. F. X. SULLIVAN, New York.

North Carolina

To Camp Wadsworth, S. C., from Southeastern Department, Capt. R. W. SPICER, Goldsboro.

Ohio

To Americus, Ga., from Arcadia, Major C. P. GROVER, National Military Home.

To Camp A. A. Humphreys, Va., camp hospital, from Fort Benjamin Harrison, Lieut. J. A. HEELEY, Parkman.

To Camp Sherman, Ohio, base hospital, from Camp Travis, Lieut. J. M. PUMPHREY, Mount Vernon.

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Lieut. B. L. GOOD, Van Wert.

To Cape May, N. J., from Camp Sherman, Lieut. A. H. ALAND, Cleveland.

To Pittsburgh, Pa., from Walter Reed General Hospital, Lieut. W. H. KEENAN, Coshocton.

Pennsylvania

To Boston, Mass., from West Baden, Major W. H. THOMAS, Philadelphia.

To Camp Dix, N. J., as tuberculosis examiner, from Otisville, Capt. S. A. LOEWENBERG, Philadelphia.

To Camp Meade, Md., base hospital, from Camp Dix, Lieut. C. H. PHILLIPS, Wilkes-Barre; from Surgeon-General's Office, Capt. R. V. ROBINSON, Pittsburgh.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Capt. U. P. HORGER, Philadelphia.

To Carlisle, Pa., from Middletown, Pa., Capt. O. G. LEWIS, Washington.

To Fort McHenry, Md., from Camp Dix, Capt. I. I. PARSONS, Media; from Pittsburgh, Capt. S. S. LANDIS, Duquesne.

To Fort McHenry, Md., from Camp Dix, Lieut. F. S. CHAMBERS, Philadelphia.

To Hoboken, N. J., from Fort Ontario, Lieut. H. A. WICK, New Bethlehem.

To Lakewood, N. J., from Camp Grant, Capt. A. R. MATHENY, Pittsburgh.

To Newport News, Va., from Fort Ontario, Lieut. J. A. MERIWEATHER, Philadelphia.

To Philadelphia, Pa., from Markleton, Pa., Capt. J. WALSH, Philadelphia.

To Walter Reed General Hospital, D. C., from Surgeon-General's Office, Capt. C. C. YOUNT, Philadelphia.

The following orders have been revoked: *To Camp Meade, Md.,* base hospital, from Camp Dix, Lieut. C. H. PHILLIPS, Wilkes-Barre. *To Governors Island, N. Y.,* from Madison Barracks, Lieut. J. A. COEN, Bristoria.

South Carolina

To Walter Reed General Hospital, D. C., from Newport News, Major M. R. MOBLEY, Florence.

South Dakota

To Walter Reed General Hospital, D. C., from Camp Dodge, Lieut. M. L. STIFFLER, Yankton.

Tennessee

To Fort Bliss, Texas, base hospital, from Denver, Lieut. H. P. CONLEY, Memphis.

To Hampton, Va., Langley Field, from Schenectady, Lieut. E. E. BYRD, National Soldiers Home.

Texas

To Army Medical School, D. C., from Fort Howard, Capt. W. H. MORROW, Dunn.

To Camp Custer, Mich., from Camp Logan, Major H. C. BIERBOWER.

To Camp Meade, Md., from Camp Dix, Major J. G. FLYNN, Galveston.

To Camp Zachary Taylor, Ky., from Camp MacArthur, Major H. B. McMURDO.

To Hoboken, N. J., from Camp Dix, Major W. B. CARRELL, Dallas.

To Rantoul, Ill., Chanute Field, from Houston, Capt. W. O. STEPHENSON, Dallas.

To report to the commanding general, Southern Department, from Houston, Capt. H. C. CURTIS, McKinney; Lieut. D. H. BROOK, Travis.

Utah

To Fort D. A. Russell, Wyo., from Hoboken, Capt. F. DUNN, Springfield.

Wisconsin

To Camp Meade, Md., from Fairfield, Capt. E. G. FESTERLING, Reedsville.

To Fort Sheridan, Ill., from Fort Riley, Capt. W. A. McEACHERN, Superior.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. H. R. CARTER, proceed to New Orleans, La., and other places in the South to supervise malaria investigation.

Surgeon MACK ROBERS (Reserve), relieved at 280 Broadway, New York; proceed to the United States Government Hospital at Montgomery, Ala., for duty.

Passed Asst. Surg. R. H. HETERICK, orders to proceed to Rotterdam, Holland, revoked; proceed to the marine hospital, Chicago, Ill., for duty.

Passed Asst. Surg. J. H. LINSON, relieved at the War Risk Insurance Bureau, proceed to Rotterdam, Holland, for duty in the office of the American Consul.

Passed Asst. Surg. CARL MICHEL, relieved at the marine hospital at Chicago, Ill., proceed to the quarantine station, San Juan, Porto Rico, and assume charge.

Asst. Surg. PETER J. GORMAN, proceed to East Norfolk, Mass., for inspection of army hospital which has been offered to this service.

Pharm. F. J. HERTY, proceed to Washington, D. C., for special temporary duty for about one month in connection with investigation of stream pollution and influenza.

Acting Asst. Surg. ANDREW J. ANDERSON, proceed to Dansville, N. Y., and report at the U. S. Public Health Service Hospital for duty.

Acting Asst. Surg. W. C. SCHROEDER, proceed to the United States Public Health Hospital at Greenville, S. C., for duty.

Acting Asst. Surg. E. W. SCOTT, relieved at Washington, D. C., proceed to the U. S. Public Health Service Hospital at Jacksonville, Fla., for duty.

Asst. Surg.-Gen. L. L. LUMSDEN (Reserve), relieved from duty from the Emergency Fleet Corporation; proceed to Washington, D. C., and resume active charge of the studies and demonstration of rural sanitation.

Surgeon G. B. YOUNG, relieved from duty with the Navy Department and at Norfolk, Va.; proceed to Stapleton, N. Y., and assume charge of the marine hospital.

Passed Asst. Surg. ROBERT OLESEN, attend meeting of the State Medical Association of Alabama at Mobile, Ala., April 16, 1919; proceed to Birmingham, Ala., to deliver an address for the Community Congress on April 2, 1919.

Passed Asst. Surg. F. A. CARMELIA, assume charge of a survey covering the cooperative supervision of drinking water supplies by Federal and State Authorities.

Asst. Surgeons W. F. FOX, L. L. WILLIAMS, Jr., D. J. PRATHER, and R. L. DeSAUSSURE; report to chairman of board of medical officers, April 7, 1919, for examination to determine their fitness for promotion, at Washington, D. C.

Asst. Surg. H. A. SPENCER, relieved at Pensacola, Florida. Proceed to Washington, D. C., for temporary duty in the office of the chief medical advisor of the Bureau of War Risk Insurance.

Asst. Surg. R. W. HART, proceed to Secaucus, New Jersey; inspect army hospital to determine its fitness for Service use.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Base Hospital Transferred.—Surg. John T. Burkhalter, U. S. P. H. S., on duty at Mobile, has taken over the base hospital at Camp Sheridan, near Montgomery, which has a capacity of 1,000 beds, and in the future is to be under the charge of the Public Health Service. At present it will be devoted to the treatment of soldiers, sailors, civil service employees, and members of the merchant marine.

Personal.—Dr. Wilbur A. Sellers, Montgomery, who suffered severe cuts and stab wounds in an affray, March 31, is reported to be out of danger.——Dr. Henry B. Wilkinson, has been elected city health officer of Montgomery, to fill the unexpired term of Dr. Carney G. Laslie, resigned.——Dr. Hill W. Howell, Hamilton, has been made health officer of Sumter County succeeding Dr. Benjamin N. Walker, Livingston, resigned.——Dr. Charles A. Mohr, Mobile, has been elected all-time health officer of Mobile County.

Epidemiologic Department Inaugurated.—A bureau of epidemiology is soon to be inaugurated by the state board of health. The work of this bureau will be to locate and trace to its source every epidemic of communicable diseases, to keep complete records of communicable diseases, and to have ready for instant reference at all times a full and comprehensive reference concerning all communicable diseases.——Dr. A. M. Collinson of Maryland has been invited to take charge of the work in Alabama, and Dr. William S. Keister of Roanoke, Va., has been appointed health director of sanitation. The state is being divided into five medical units containing from five to ten counties each, each district having a minimum staff composed of an all-time health officer, a rural school nurse, an inspector and a laboratory worker.

CONNECTICUT

Personal.—John W. Churchman, Major, M. C., U. S. Army, New Haven, professor of surgery in Yale University, has been named "Officier de l'instruction publique," by the French government in recognition of his service as physician in charge of French Military Hospital 32, bis, during 1916.——William Essex McGinley, Capt., M. C., U. S. Army, New London, on duty with the American Expeditionary Forces, had bestowed on him the military cross, by King George V, at Buckingham Palace, London, April 2.——Dr. David R. Lyman, Wallingford, who went to Europe as a member of the Rockefeller Commission for Prevention of Tuberculosis in France, has returned to this country.——William F. Verdi, Major, M. C., U. S. Army, New Haven, just returned after service in France, has been elected clinical professor of surgery in the Yale University School of Medicine.

DELAWARE

Personal.—Dr. Harrison M. Manning, Seaford, M. C., U. S. Army, who went overseas about two years ago and has been on duty in a base hospital in France, has returned home.——Dr. James P. Lofland, Milford, has been elected president, Evans Roberts, vice president, and E. P. Ruhl, secretary of the board of health of Milford.

State Board Appointments.—The governor announced, March 29, the following appointments to membership of the state board of health: Dr. William P. Orr, Jr., Lewes, and Dr. John W. Clifton, Smyrna (reappointed), and Dr. Edgar Bullock succeeding Dr. Abram E. Franz, term expired, and Dr. George W. K. Forrest, succeeding Dr. James A. Draper, all of Wilmington, resigned. Dr. Orr has been secretary of the board for about twenty years and president for several years past.

DISTRICT OF COLUMBIA

Lectures on Physical Anthropology.—Dr. Ales Hrdlicka, director of the division of physical anthropology, National Museum, is giving a series of lectures on physical anthropology in relation to medicine at the medical school of Georgetown University.

Changes in Contagious Disease Regulations.—As a result of conferences between the Committee on Contagious Diseases of the District Medical Society and the health officer, the contagious disease regulations will be so modified that practitioners will no longer be required to send in report cards in cases of diphtheria when the dagnosis has been confirmed bacteriologically by the health department laboratory. It has been arranged also that hereafter practitioners may report cases of scarlet fever and diphtheria as recovered when the clinical recovery is advanced sufficiently to warrant the discontinuance of professional attendance. Health department inspectors will thenceforward assume charge of the cases until the end of desquamation or the necessary negative cultures permit discharge from quarantine. Efforts were made to relieve physicians of the annoying obligation of sending reports of recovery from ailments like whooping-cough, chickenpox and measles, but since such recovery reports are specifically required by law only congressional action can change the situation. This is an illuminating example of the difficulties Washington labors under by reason of having the United States Congress for a city council.

Medical Society Activities.—The medical society of the District of Columbia will give a "get together" smoker on April 30. The members are rapidly coming back from the war and there is a general desire to renew the social contacts so long interrupted. It is hoped that Dr. John B. Deaver, of Philadelphia, will be the guest of the society on this occasion. The building committee of the society, having paid in full for a lot on M Street N.W., between Seventeenth and Eighteenth Streets, is vigorously moving toward the erection of a home for the organization. Building plans have been prepared and unanimously adopted by the society and the trustees have been authorized to proceed to build as soon as they think they have sufficient funds in hand. The plans call for a two story and basement structure, with provision for an auditorium, offices and committee rooms on the first floor; a reception or banquet hall, with serving room and cloak rooms on the second floor; and janitor's quarters, furnace room and coal bunkers in the basement. The Italian renaissance façade will be of Indiana limestone. It is estimated that the project will cost about $75,000 and the committee has already secured about 12 per cent. of the necessary amount before undertaking any campaign for further funds.

ILLINOIS

Rush College Commencement Date Advanced.—In order to permit attendance at the annual session of the American Medical Association, the commencement date of Rush Medical College has been advanced from June 11 to Friday, June 6.

Honors to Physicians.—The medical officers on duty at Camp Grant gave a dinner, April 2, in honor of the camp surgeon, George B. Lake, Col., M. C., U. S. Army, and Mrs. Lake, at which they were presented with a solid silver coffee service. The presentation speech was made by Frederick J. Combe, Major, M. C., U. S. Army, San Antonio. Colonel Lake has been transferred to take command of the Army General Hospital, Fort Benjamin Harrison, Ind.——Dr. Wladyslaw A. Kuflewski, Chicago, senior attending surgeon of St. Mary of Nazareth Hospital, was the guest of honor at the hospital on the occasion of the silver jubilee of his graduation. He was presented with a loving cup by Dr. Albert J. Ochsner, surgeon in chief, acting for the attending staff.

INDIANA

State Board Elects.—At the annual meeting of the state board of health held in Indianapolis, April 9, Dr. Hugh A. Cowing, Muncie, was elected president, and Dr. John H. Hewitt, Terre Haute, vice president. Dr. John N. Hurty, Indianapolis, was reelected secretary.

Infectious Diseases.—From Muncie it was reported, April 12, that although there had been at least 200 cases of influenza at the end of the week, the epidemic was on the decline so that on the date mentioned there were not more than fifty cases in the city. At Anderson, April 12, it was said by the county superintendent of schools that only eighty-four out of 289 eighth grade pupils had passed the examinations for promotion, owing to the great loss of time on account of influenza. At Kokomo, April 11, it was reported that influenza was responsible for seventy deaths during March. The highest previous record was in December, when it was fifty-six. Whiting has had two cases of lethargic encephalitis. In Indianapolis there had been two deaths from encephalitis, as reported April 10.

Personal.—Frank B. Humphreys, Major, M. C., U. S. Army, Angola, recently discharged from duty, has been promoted to lieutenant-colonel, M. C., dating from Nov. 11, 1918.——Dr. James T. Biggerstaff, Wabash, health officer of Wabash County, has won his contest with the board of county commissioners, which had attempted to remove him from office in January. The board had declared the office vacant and had made charges of malfeasance in office, which later were dropped by the board. Dr. Biggerstaff's claim for salary for the period has also been allowed.——Dr. Harley H. Miller, Galveston, is seriously ill with septicemia following an infection of the hand.——Larue D. Carter, Lieut.-Col., M. C., U. S. Army, Indianapolis, who is on duty with the American Expeditionary Forces in France, has been promoted to colonel, M. C.

MARYLAND

Annual Meeting of Medical and Chirurgical Faculty.—The one hundred and twenty-first annual meeting of the Medical and Chirurgical Faculty of Maryland convened, April 22, and continued in session until April 24. With the exception of the final sessions Thursday, the meetings were held in the Faculty Hall, Baltimore. The last sessions were held at the Johns Hopkins Hospital and at U. S. Army General Hospital No. 2, Fort McHenry.

To Fight Narcotic Evil.—The Maryland Board of Pharmacy, at a recent meeting, resolved to take such action as would prevent the spread of the narcotic drug evil in Maryland, and, so far as possible, to get at the sources of supply and prevent the illegal traffic of such drugs as cocain, morphin and heroin, and to cooperate with the police authorities of the state and apprehend all physicians, pharmacists and others who are illegally prescribing, dispensing and dealing in these dangerous drugs. The board believes that the drug evil is not so serious in Maryland as in other states, and that the enforcement of all state narcotic legislation should be in the hands of the board of pharmacy in active cooperation with the various police departments of the state, and the United States Revenue Department in the enforcement of the Harrison Narcotic Law. The Maryland board already has adopted a regulation covering the professional status of a pharmacist as to the use of narcotic drugs, in that an applicant for registration is compelled to furnish with the application a signed affidavit by two persons, preferably pharmacists in good standing, that the applicant is not in any way addicted to the use of narcotics. The regulation is being vigorously enforced and each application is investigated before action is taken. This precaution is to protect the citizens of the state from unscrupulous venders of these dangerous drugs.

MINNESOTA

Personal.—Erling W. Hansen, Capt., M. C., U. S. Army, Minneapolis, on duty with the Army of Occupation, has been decorated with the Croix de Guerre with a gold star. While in charge of Ambulance Company No. 12, and attached to the 18th Regiment, he displayed unusual coolness and courage, remaining in an exposed dressing station until all the wounded had been dressed and sent to the rear.——Richard O. Leavenworth, Lieut., M. C., U. S. Army, Glencoe, who had been located in the St. Mihiel sector, has been sent to the University of Nancy, France, for special surgical study.

NEW YORK

Personal.—Dr. Clive E. Hallenbeck, Dunkirk, has been placed in charge of the venereal disease clinic which is to be opened in that city, May 1.——Drs. Clarence L. Hyde, Horace LoGrasso, and Harry J. Bendes of the J. N. Adams Memorial Hospital, Perrysburg, conducted a public health clinic at Gowanda, April 11. This was the first of a series of clinics to be held in Cattaraugus County under the auspices of the Tuberculosis Committee of the State Charites Aid Commission.——Dr. Isaac W. Brewer, Geneva, has been apponted full-time health officer of Watertown.

Public Health Activities.—Sufficient funds have been promised to secure the services of expert diagnosticians for two tuberculosis clinics which will be held each month for one year, at Plattsburg.——The local Red Cross Chapters in Waverly and East Rochester have utilized Red Cross funds for the employment of public health nurses.——A health survey of the Tonawanda Indian Reservation is being made by Mrs. Elizabeth N. Finnegan, who previously made a similar survey of the Onondaga Indian Reservation.——The trustees of the village of Potsdam have engaged a public health nurse.——The Onondaga Indian Reservation has employed a visiting nurse who, in addition to her regular duties is planning a social center for young women and aiding in the distribution of clothing to families in need.——The Cayuga County board of supervisors has appropriated $5,000 for the establishment of a county laboratory at Auburn.

New York City

Personal.—Lieut.-Col. Burton J. Lee has been cited for exceptionally meritorious and distinguished services as surgical consultant attached to the Second Division. He served continuously at the front, and displayed unusual ability in directing surgical teams which cared for hundreds of wounded soldiers at a time when adequate hospitalization could not be established.

Dinner to Colonel Lambert.—A complimentary dinner was tendered Col. Alexander Lambert, M. C., U. S. Army, President-Elect of the American Medical Association, by his professional friends in New York City on Saturday night, April 12, at the new Commodore Hotel. About 400 of the leading physicians of New York and the East attended. Dr. George D. Stewart acted as toastmaster. The speakers were Col. Frank Billings, M. C., U. S. Army, Chicago; Dr. William S. Thayer of Baltimore, formerly Brigadier-General, M. C., U. S. Army; Dr. George E. Brewer of New York, formerly Lieutenant-Colonel, M. C., U. S. Army, and Rev. Charles A. Eaton of New York. Dr. Lambert responded with an account of his experiences abroad as chief medical director of the American Red Cross hospitals.

The Drug Campaign.—Health Commissioner Copeland has made a formal protest to the prison commission that convicts in state institutions are receiving an uninterrupted supply of narcotic drugs. Another serious matter brought to the attention of the health commissioner is that a considerable number of transportation employees are drug addicts. According to Commissioner Copeland, the state narcotic commission has not yet taken steps toward remedying the situation over which it has sole control. The commissioner has offered the narcotic drug commission offices and clerks in the department of health building, as no appropriation was made for offices for the commission in this city. The announcement is made that no more clinics for the treatment of drug addicts will be opened by the health department at present and that the work will be confined to that of the Worth Street Clinic. Dr. Copeland emphasizes the necessity for physicians to continue prescribing for drug addicts with a view of effecting a cure. Walter R. Herrick has been appointed chairman of the state narcotic drug commission. Statistics based on the histories taken from 214 drug addicts coming to the clinic show that most of them are unskilled workers. Thirty-four different pursuits are represented. At least 20 per cent. of the addicts are engaged in transportation work. Among this number were four physicians, one newspaper man and a schoolteacher.

OHIO

Trachoma Threatened.—There are reported to be more than 500 cases of chronic infection and inflammation of the eyes in the city of Portsmouth, and Dr. William S. VanFossen of the state board of health considers the situation sufficiently grave to require prompt and decisive action. This may necessitate medical inspectors and attending nurses in schools and the establishment of a clinic for further treatment.

Correction.—Information has been received from the secretary of the state medical board that the item which appeared in The Journal, April 12, p. 1089, relating to the Talley bill is incorrect, explaining that the Talley bill is an amendment to the medical practice act of Ohio, and gives mayors' courts, police courts and justices of the peace final jurisdiction, and that it is general in its application, applying both to medical and to limited practitioners.

Personal.—Aretas E. Biddinger, Asst. Surg., Lieut., M. C., U. S. Navy, Cleveland, has been recommended for the Distinguished Service Order.——Dr. John W. McKemy, Capt., M. C., U. S. Army, who has been on duty with the American Expeditionary Forces in France and who was cited by Major-Gen. John O'Ryan for gallantry under fire, has been discharged from the service and returned to his home.——Dr. George R. Wiseman, Amherst, who is on duty in Palestine, has been assigned to take charge of the hospital at Damascus.

Illegal Practitioners.—Laura May, Columbus, is said to have been placed under arrest at Yellow Springs, April 2, on the charge of practicing medicine without a certificate. The affidavit against Dr. May charges her with illegally practicing medical healing in the case of the 7 year old child of John F. Bock, Montgomery, who is a sufferer from organic heart trouble.——Charles H. Ross, Youngstown, is said to have been arrested on orders of agent of the state health department charging him with practicing medicine without a license or certificate from the state medical board, and representing himself as being a licensed physician. He was sentenced to three months in the county jail and to pay a fine of $300 and costs.

PENNSYLVANIA

Health Department Summer Camps.—Dr. Edward Martin, state commissioner of health, has arranged for a series of summer camps for the medical inspectors of his department with the idea of extending them for other attachés of his department. The county medical inspectors will be required to attend the camps, where instruction in sanitation and specialized lines will be given.

Hospital Units Return.—Sixteen medical officers of U. S. Base Hospital No. 27, the University of Pittsburgh Unit, after more than eighteen months' service overseas, reached Pittsburgh, April 4.——Base Hospital No. 10, the unit organized by the Pennsylvania Hospital, landed in New York, April 17. This unit left this country in May, 1917, with twenty-seven officers, sixty-five nurses and 165 enlisted men. It returns with twenty-eight officers, eleven of whom were with the original unit, and 168 men. At Tréport, France, it handled 48,800 cases; during the second battle of Ypres, in August, 1917, and in March, 1918, the unit's limit was severely taxed. The unit was cited on two occasions by the British high command. The first citation was in September, 1917, and the second in March, 1918.

Personal.—In celebration of forty continuous years of service on the staff of the Dixmont Hospital for the Insane, thirty-five years of which were spent as superintendent, a reception was tendered Dr. Henry A. Hutchison by friends and employees, at Dixmont, April 15.——Fred H. Bloomhardt, Lieut.-Col., M. C., U. S. Army, Altoona, has been selected by the general staff of the army in France to take a postgraduate course in medicine at the Sorbonne, Paris.——Dr. Maurice T. Leary, Ridgway, secretary of the Elk County Medical Society, has been appointed county medical inspector for the department of health.——Dr. John L. Marchand, Irwin, has returned from Prinzapolka, Nicaragua, Central America, where he has been for several years.——Edward R. Plank, Major, M. C., U. S. Army, Carlisle, one time secretary of the Cumberland County Medical Society, is now commanding officer of the 316th Field Hospital, American Expeditionary Forces.——Dr. John N. Sprowls, Claysville, was seriously injured when his automobile went over an embankment near Taylorstown, February 27. His left hip was fractured and left knee lacerated. He is under treatment in the City Hospital, Washington.

Philadelphia

Qualify for Medical Inspectors.—Twenty-one physicians in a class of thirty have qualified for the position of assistant school medical inspector, bureau of health.

Public Health Day.—A public health day has been set for April 30. It will be conducted under the auspices of the department of public health and charities, College of Physicians, Child Federation, county medical society, and Babies Welfare Association. The meeting will be held in the William Penn High School. The speakers will be: Dr. Edward Martin, commissioner of health for Pennsylvania; Dr. S. Josephine Baker, director of the Bureau of Child Hygiene, and Dr. Wilmer Krusen, director of the department of health and charities.

Babies Hospital Contract.—The contract for the Babies Hospital, to be erected at the northeast corner of Delancey Place, has been awarded. The building is to be eight stories in height, and fireproof. The Babies Hospital in Philadelphia was established in June, 1911, and was incorporated under the laws of Pennsylvania, to provide 'for the treatment and care of sick babies and in connection therewith, to instruct and train suitable persons in the duties of caring for babies; to institute plans for the study, prevention and cure of disease of early life."

VIRGINIA

Object to License Tax.—Physicians and dentists of Norfolk, it is said, are planning to discontinue free service in various departments of the city government through the health department, following the assessment of a license tax against the professions. The tax proposed by the ordinance is $25, and 1 per cent. of all income over $2,000. In [illegible] claim for tax exemption, physicians [illegible] that at least $200,000 in gratuitous serv

New Sanatorium to Be Established.—A new sanatorium for the treatment of pulmonary tuberculosis is to be established at Charlottesville during the summer by the state board of health. This will be the third tuberculosis sanatorium to be built by the board, the others being at Catawba and Burkeville. The state board of health and the University of Virginia Department of Medicine plan to affiliate in the conduct of the sanatorium, the students of the medical school serving in rotation in the sanatorium, and the nurses for the institution being supplied from the university hospital training school. It is expected that the institution will open next autumn, as soon as buildings capable of housing 100 or more patients are completed.

WISCONSIN

New Officers.—At the annual meeting of the Marinette County Medical Society held in Marinette, March 28, Dr. John W. Boren was elected president; Dr. Alexander T. Nadeau, vice president, and Dr. Luella E. Axtell, secretary-treasurer.——The Fox River Valley Medical Society at its annual meeting held in Fond du Lac, March 11, elected Dr. R. H. Purdy, Appleton, president. Green Bay was selected as the next place of meeting.

Personal.—Clarence C. Del Marcelle, Lieut., M. C., U. S. Army, city physician of Neenah, who has been on duty in the American Expeditionary Forces, has been awarded the Croix de Guerre for bravery while attending wounded men under fire.——Dr. William L. Holt, health officer of Beloit, who has been ill with scarlet fever, is convalescent, and has resumed his duties.——Dr. Walter A. McEachern, M. C., U. S. Army, Superior, has been elected president of the Superior Medical Officers of the World's War.——Dr. Joseph N. Aubin, Peshtigo, is under treatment in St. Joseph's Hospital in Menomonie, for pleurisy.

CANADA

Defeat of the Osteopath Bill.—The *Bulletin Médical de Québec* remarks, "As we might have foreseen, the osteopath bill has been again rejected by our legislators. It did not even succeed in getting into the legislative assembly, and the efforts for it had to be restricted to an attempt to influence the committee on private bills."

The Quebec Medical Society.—This medical society seems to be displaying a new burst of energy which arouses the expectation of important works. The next meeting is to be held in new quarters and in a new part of town. The *Bulletin Médical de Québec* comments that it is hoped that this new start will aid in drawing the members of the profession closer together for mutual stimulation and production of works which may in time form an important nucleus for medical progress. "It is a duty for us all in this after-the-war period to aid in this work of reconstruction and development."

GENERAL

Roentgenologists to Meet.—The midsummer meeting of the Western Roentgen Society will be held in Cleveland, June 5 and 6, under the presidency of Dr. Oliver H. McCandless, Kansas City, Mo.

Women Physicians Establish Hospitals.—The Medical Women's National Association, New York, has established and is maintaining four hospitals in France and one in Serbia, and has sent more than 100 women physicians to service in Europe.

Red Cross in Serbia.—Nineteen American women physicians are now in the Balkans, assisting the American Red Cross in its work of caring for the sick and destitute. These physicians are from the American Women's Hospital at New York and are located in Serbia, Montenegro and Albania. In Serbia, where the most sickness and destitution exist, the following women physicians are at work: Drs. Marjorie B. Burnham, Ashtabula, Ohio; Mary H. Elliot, New York; Harriet M. Gervais, Dorchester, Mass.; Alberta M. Greene, Judith Bay, Mont.; Lulu Peters, New York; Marion C. Stevens, Reading, Mass.; Regina Flood Keyes, Buffalo, and F. Mabel Flood, Elmira, N. Y. Dr. Katherine M. Cook, Washington, Pa., and Dora E. Bowman, Kansas City, Mo., are assisting the American Red Cross physicians in Montenegro; and Drs. Nell G. W. Bartram, Huntington, Pa.; Mary J. Hyndman, Philadelphia, and Sarah E. Foulks, Burlington, N. J., are doing similar work in Albania.

Miss Delano Dies.—Miss Jane A. Delano, who died, April 15, aged 56, at Base Hospital No. 8, at Sauvigny, France, was one of the foremost figures of the nursing world. Under her direction more than 30,000 nurses were recruited through the American Red Cross for service with the Army and Navy after the United States entered the great conflict. Miss Delano graduated from Bellevue Hospital, New York, in 1886, and two years later volunteered to nurse yellow fever victims in Jacksonville, Fla. Although at that time medical science had not decided that the mosquito was a yellow fever carrier, Miss Delano had reached that conclusion, and had insisted on the use of mosquito netting by her nurses with the most satisfactory results. In 1891 she was made superintendent of the nurses' training school of the University of Pennsylvania, a position she held for five years, and in 1900 she returned to Bellevue Hospital to direct the nurses' training school there, continuing in the capacity until 1905. When the American Red Cross, following the final reorganization in 1906, entered into an agreement with the American Nurses' Association for the purpose of developing a nursing reserve for the Army Nurses Corps, Miss Delano was appointed chairman of the committee in charge of the work. She was also named as superintendent of the Army Nurse Corps by the Surgeon-General, in which capacity she visited the Philippine Islands, China, Japan and Hawaii.

Conference on Hospital Standardization.—On Monday, April 21, at the headquarters of the American Medical Association, Chicago, a conference was held of representatives of eight organizations interested in the development and standardization of hospitals. The organizations and their representatives are as follows: American Medical Association, Dr. Arthur Dean Bevan; the American Hospital Association, Dr. A. R. Warner; the American College of Surgeons, Col. Franklin H. Martin; the Association of American Medical Colleges, Dr. Fred C. Zapffe; the Catholic Hospital Association, Dr. B. F. McGrath; the American Nurses' Association, Miss Clara D. Noyes; American Association of Hospital Social Workers, Miss Edna G. Henry; Federation of State Medical Boards of the United States, Dr. Walter L. Bierring. Others present were Dr. S. S. Goldwater, director of Mount Sinai Hospital, New York; Dr. John M. Dodson, dean of Rush Medical College; Dr. N. P. Colwell, secretary of the Council on Medical Education of the American Medical Association, and Miss M. H. McMillan, principal of the School for Nurses of the Presbyterian Hospital.

It was decided to organize an American Hospital Conference to be made up of two representatives of each of the organizations above named and two each also from the American Association of Industrial Physicians and Surgeons and the medical departments of the United States Army, Navy and Public Health Services, altogether twenty-four members. An executive council of three members was created to have in charge the formulation of standards, constitution and other essentials which will be presented at the first meeting of the conference which it is planned will be held in connection with the annual meeting of the American Hospital Association in September. A second meeting will be held in connection with the annual conference of the Council on Medical Education to be held in Chicago in March, 1920. The members appointed on the executive council were Dr. A. R. Warner, chairman, Cleveland; Dr. John M. Dodson, Chicago, and Dr. Walter L. Bierring, Des Moines, Iowa. It is believed that through this hospital conference any standards prepared for the measurement of hospitals will meet the needs of all the various factors now interested in the development and standardization of hospitals.

FOREIGN

The Helmholtz Medal.—The German Helmholtz medal has been awarded this year to Roentgen.

The German Casualties During the War.—The *Deutsche medizinische Wochenschrift* of Dec. 26, 1918, stated that the latest official figures place the casualties at 1,600,000 killed, including 58,500 officers; 20,300 missing; 618,000 severely and 4,164,000 less severely wounded.

Deaths in the Profession Abroad.—**L. Mohr**, professor of internal pathology at the University of Halle, author of works on metabolism.——**Dr. T. Jaffé**, at Frankfurt a. M., aged *69.* ——**Dr. R. Semon**, professor of anatomy at the University of Jena, author of a well known work on the memory, aged 60.——**Dr. H. Fischer**, formerly professor of surgery at the University of Berlin, aged 88.

Miyajima Doing Research Work in Brazil.—The *Japan Medical World* states that Professor Miyajima of Tokyo has arrived in Brazil where he is to do research work at the Butantan Institute, the free use of which has been granted him by the public health authorities. This institute specializes in the preparation of antiserums and antivenins.

Miyajima's research on Japanese river fever, in collaboration with Professor Kitashima, was recently mentioned in The Journal, p. 1115.

Physicians in German Legislative National Assembly.—Only one physician, Dr. Hartmann, was elected to the National Assembly in Germany, but three physicians represent the profession in the Prussian Assembly. They are Abderhalden of Halle, Schlossmann of Düsseldorf and Struve of Kiel. Mugdan, who for many years has been the valiant representative of the profession in the reichstag, was a candidate for election but was defeated, as also was a woman physician candidate.

Personal.—Norman Cecil Rutherford, Lieut.-Col., R. A. M. C., England, has been ordered to be detained as insane in his trial for the killing of Miles Charles Seton, Major, R. A. M. C., of Melbourne, Australia, January 13.——Dr. Elizabeth E. Leonard, dean of Union Medical College, and superintendent of Douw Hospital, Peking, China, spoke before the Presbyterian Society in Seattle, April 8. Dr. Leonard has been in China since 1895 and expects to return to her work in July. The hospital with which she is connected cares for about 8,000 patients a year.

Too Many Medical Students in Austria.—The *Deutsche medizinische Wochenschrift* relates that 1,000 students registered for Professor Tandler's course in obstetrics, at Vienna, and another professor of obstetrics had quite a large registration. Tandler appealed to the students for most of them to abandon the idea of a medical course and take up another career, preferably farming. He declared that there would be no room for so many physicians in Austria, and that probably physicians from Austria would not find a ready welcome in other countries for the next few years at least. There are about 4,000 medical students enrolled, a fourth of them from Galicia. He protested that some limit must be imposed.

Proposed Consolidation of Danish Medical Societies.—After prolonged discussion, the Copenhagen Medical Society recently voted, with only two dissenting voices, in favor of the formation of a Danish Medical Association to consolidate the medical societies of the country and the specialist societies, and to accept the offer of the owner and editors of the *Hospitalstidende* to hand over that journal to the new general association. The Copenhagen Medical Society has a record of 125 years of work, and was for many generations the center of scientific activity for the whole country. The trend of the times has brought into existence independent medical societies at other points, and each group of specialists now has its own society; but the profession now realizes the importance of organization and cooperation on a country-wide scale, and delegates from the existing societies have been discussing the proposed merger for some time. The *Hospitalstidende* is owned by Prof. T. Rovsing who offered to turn it over for five years to the proposed new Danish Medical Association. The other Copenhagen medical weekly, the *Ugeskrift for Læger,* is the organ of the Almindelige Danske Lægeforening. Both have been indexed regularly in our Current Literature Department since its foundation as taking high rank among the representative medical journals of the world.

Conference of Italian Medical School Inspectors.—The *Policlinico* relates that the medical school inspectors of the principal cities of Italy met recently at Bologna under the auspices of the Italian Association for the Hygiene of Schools. The addresses and discussions emphasized the necessity for educating the public to the idea that the school is the pivot for all action for the hygienic uplift of the nation. Resolutions were passed urging the adoption of medical school inspection for all schools throughout the country, and a course of training in pedagogic hygiene for all candidates for teachers of every grade, from the lowest to the highest. It was decided to publish a pamphlet on school hygiene in its minutest details, to be sent to all health officers, school principals and school inspectors, etc., and another pamphlet more popularly worded will be distributed among the teachers. The American Red Cross has promised its cooperation in this line. The Italian Association for the Hygiene of Schools has a permanent office in charge of Prof. M. Ragazzi, via Baldi, No. 15, Genoa, Italy, and it asks for suggestions of all kinds on ways and means to promote hygiene, and reports on what has been already accomplished at various points in the line of hygiene in and outside of the school, training in hygiene, etc. The Italian government has already organized a series of five lectures on practical hygiene to be delivered in all the normal schools of the country by university lecturers.

LONDON LETTER

London, April 2, 1919.

The American Red Cross in Great Britain

An account of the work of the American Red Cross in Great Britain compiled by Capt. C. D. Morris, the director of information attached to the American Red Cross in this country, makes an interesting story of difficulties overcome and efficient organization. At the opening of 1918, the only hospital beds available for American soldiers were in two or three American Red Cross hospitals which were then being used for British troops. The influx of Americans was only just beginning, and the Army Medical Service and the Red Cross together bent themselves to the task of providing adequate accommodation for hospital cases. All the American hospitals were directly in charge of the United States Army or Navy medical authorities. The assistance of the Red Cross was called on in cases in which the army and navy supply department found itself unable, for any reason, to meet the requirements of the men, or in case of sudden emergency. The function of the Red Cross hospital department became, therefore, largely that of a supply and equipment organization, and this function was exercised through members of the Red Cross personnel acting in conjunction with, and more or less under the direction of, the army medical authorities. Practically no plans for any extensive hospital organization in Great Britain were thought necessary until the German spring offensive brought about a sudden decision to bring large numbers of American sick and wounded to England. With the decision to brigade American troops with the British, an entire revision of the plans for hospital work became imperative, for now Americans from the front were expected to come to England in large numbers. In the meantime, the number of American troops that were being transported by way of England had increased beyond all expectations, and large increases in the corresponding hospital accommodation became necessary for their needs. In addition, the possibility of an epidemic had also to be kept in mind. A considerable number of pneumonia cases were expected from the transports during the autumn, and plans were made accordingly; but the enormous number of serious cases which accompanied the outbreak of influenza on the transports swamped all the hospitals and tested to the utmost the army medical service.

The general scheme of hospital construction adopted by the army in the early summer of 1918 provided for a total of about 25,000 beds before the end of the following winter. Of this number, the ten American Red Cross hospitals for soldiers (excluding the two naval hospitals and the nurses' convalescent home) would have provided about 5,500 beds if the plans for construction had not been broken off by the armistice. At this time the total number of beds available in Great Britain was about 9,770, of which 2,700 were in the ten American Red Cross hospitals. The largest number of Americans cared for at any one time in American hospitals in Great Britain was 9,310 (Nov. 12, 1918). The number of American soldiers cared for in British hospitals reached its maximum point, Oct. 30, 1918, when there were 5,584. Up to the end of September, the supply of American hospital beds in Great Britain generally exceeded the demand; but during October and November, it did not. This was due mainly to the influenza epidemic, and large numbers of influenza patients had to be sent to British hospitals. The influenza epidemic marked a separate epoch in the hospital problem in Great Britain. More than half the deaths among the American forces in Great Britain were due to this cause. The total number of cases during the period under review was 7,512. The number of deaths from pneumonia during the same period was 1,717. The total number of American soldiers who were patients in hospital in Great Britain during the year was 41,892. The high-water point of the American hospital records for the year came in October, when the influenza epidemic was at its height. During that month, 12,806 American soldiers were admitted to hospital in Great Britain. The army medical personnel engaged in the work of American hospitals in great Britain numbered, all told, about 3,200 persons, including 310 medical officers, 541 nursing corps, and 1,990 enlisted force.

The Prevention of Anthrax

In a lecture delivered at Bradford, Dr. T. M. Legge, government inspector of factories, dealt with the problem of anthrax prevention. He said that efforts had been made during the past forty years to control the danger to the operatives from anthrax in infected wool and hair coming from abroad. These consisted in attempting to remove dust by downward exhaust ventilation, separating out fallen fleeces and blood-stained material, and warning the workers of the need of early treatment, by means of illustrated placards showing the nature of the disease. Despite this, although the mortality rate had been kept down, the number of cases had increased, especially during the war. Thus, in the five years 1901 to 1905, ninety-eight cases were reported, including twenty-nine deaths; and in the five years 1914 to 1918, 242 cases and thirty-one deaths. Only two ways were possible for getting at the cause—either to prevent animals from contracting anthrax or to destroy the spores before fleece or hair was handled. No one could hope that the nomadic tribes in Central Asia would take steps to stamp out the disease in animals. Steam, while destroying anthrax spores, destroyed the wool for manufacturing purposes. Researches, however, carried out during the war at Bradford on behalf of the anthrax committee appointed by the Home Office, showed that wool containing highly infected blood clots could be rendered practically sterile by treatment involving, first, agitation for twenty minutes in warm water containing soap solution and a little sodium carbonate, assisted by squeezing through rollers, subsequent agitation of the wool with little blood adhering to it in a bath of warm water containing 2.5 per cent. formaldehyd, again assisted by squeezing through rollers, and finally drying in a heated current of air. Already steps are being taken to establish a trial disinfecting station in this country, and to carry out the disinfection of the most dangerous materials. Ultimately it is hoped that the disinfection will be carried out under British control in the place of export of infected material.

Health and Occupation

The agitation of the miners for increased wages and shorter hours of work has been carried out with a good deal of exaggeration as to the danger and unhealthfulness of their work. In a letter to the *Times*, Prof. J. S. Haldane corrects this widespread mistake as to the dangers to life and health in coal mining as compared with other occupations, and gives the subjoined table, compiled from the last of the reports on occupational mortality issued by the registrar-general. The figures are for ages from 15 to 55, the death rates for older persons being unreliable on account of imperfections in the census entries. For purposes of comparison various occupations are included.

DEATH RATES FROM ALL CAUSES PER THOUSAND LIVING IN EACH AGE PERIOD

	Age Period			
	15-25	25-35	35-45	45-55
All occupied and retired males	3.5	6.3	10.9	18.7
Occupied and retired coal miners	3.8	5.1	8.0	15.2
Occupied and retired barristers and solicitors	...	4.9	7.6	13.8
Occupied and retired shopkeepers	3.1	5.6	9.4	16.4
Occupied and retired physicians	...	5.6	10.6	18.5
Occupied and retired farm workers	2.4	4.3	6.4	11.2
Occupied and retired merchant seamen	9.6	13.9	19.8	29.6

Among coal miners the death rate from accident is about double that in average occupations. Even so, coal mining is a relatively safe occupation. It has become so to a steadily increasing extent during the last forty years. Apart from accidents, it is now one of the most healthful occupations, though it could be made still more healthful and considerably safer.

MEXICO LETTER

Mexico City, April 13, 1919.

Lethargic Encephalitis

News has been received from the cities of Monterey and Merida that some cases have been observed there which it is believed may be lethargic encephalitis. Although the news has not been confirmed, as the notice came from newspaper correspondents, yet it has not failed to excite some alarm. The public health authorities have not made any statement on the matter. If, as some think, the encephalitis has some relation to the epidemic of influenza, the fact is rendered probable by the extent of epidemic influenza in this country during the preceding months. If, on the other hand, the encephalitis is regarded as an anatomic variety of poliomyelitis, then it would be more difficult to explain, as the latter disease is only exceptionally seen here.

Smallpox

The state of Oaxaca is now taking its turn among the states where smallpox is developing in epidemic form. As part of that state has withdrawn from allegiance to the Central Government, it is feared that the disease may cause more ravages there than in other regions.

Visitors from the United States

Within the last month we have received the visits of different parties who have come from the republic north of us for the purpose of linking closer together the two countries. One group came from San Antonio, Texas, others from the Mississippi Valley, and the last party from Dallas, Texas. All were very cordially received and entertained, all expressed very favorable opinions of Mexico, and emphasized the necessity for establishing durable harmony between the two neighbors "which are neighbors by a geographic fatality which nothing nor no one can change." I appreciate the truth of the remarks of the visitors, their good faith and their good wishes, but as all the visitors so far have been mostly merchants, I assume that the relations which they are promoting are commercial relations. But, if the wish is to have the two peoples actually fraternize—which is what the cultured and liberal persons here desire—then there must be a work of propaganda of culture, sending to Mexico university professors, preferably those that can talk Spanish or French; there must be efforts made to increase the emigration of students to the United States and of Mexican professional men to the United States to take postgraduate courses, and there must be efforts made to promote the study of Spanish beyond the Rio Grande and of English on this side of it. Much has been said recently of the interchange of university professors and students between the two nations—and I have made myself the echo of the notices of this kind that have been sent out—but it is certain that to date, so far, there has been nothing but a series of beautiful prospects. Only one single concrete fact has been realized to date in this "getting together" on a higher plane than mere business, and this one concrete fact is the appearance of the Spanish edition of The Journal. This has had results, but the medical profession is not a leading force except in a few matters.

Personal

Among the recent deaths in the profession in Mexico are those of Dr. Delfino Victoria, who was governor of the state of Veracruz; Dr. N. San Juán, retired from practice for twenty years, the first incumbent of the chair of gynecology in the medical faculty here, and Dr. Domingo Orvañanos, formerly professor of clinical medicine in the medical faculty here and later member of the National Public Health Board from 1877 to 1918. He was the representative of Mexico in various scientific congresses.

Dr. Pedro José Zepeda, a native of Nicaragua, but recently residing in New York, has arrived here and been cordially welcomed.——Dr. J. González Urueña has been appointed *consejero* of the University in place of Dr. Orvañanos.——Dr. M. Aveleyra has been added to the medical faculty here as *profesor libre* of medical pathology.

PARIS LETTER

Paris, March 13, 1919.

Healing of Fractures after Primary Suture

At a recent meeting of the Société de chirurgie de Paris, Dr. Pierre Duval reported 56 cases of war fracture which had been sutured primarily by Dr. Picot after proper surgical cleansing of the site of the fracture. The results obtained have been 3 pseudarthroses, 3 delayed unions and 50 unions, the parts involved and the time required being: 10 fractures of the forearm, one or both bones, twenty-three days; 21 fractures of the humerus, thirty-five days; 11 fractures of the legs, sixty-eight days, and 8 fractures of the femur, eighty-six days. The fractures of the arm and forearm healed as rapidly as do closed fractures of the same bones, but in cases of fractures of the bones of the lower extremities, healing did not take place as quickly. According to Dr. Picot, the reason for this was that fractures of the upper extremities were mobilized early, whereas those of the lower extremities were mobilized late. The conclusion arrived at is that these war fractures should be sutured as soon as possible so that they may be treated as closed fractures at the earliest date.

Picot made a radiographic study of these fractures treated by primary suture, and arrived at the conclusion that in the consolidation of a war fracture the bone alone is involved. There is no bloody effusion around the bone and no attrition of the soft parts, such as are found in ordinary simple fractures, as the contused muscles have been resected and the bloody effusion evacuated by filiform drainage; on the other hand, infection does not reach the seat of the fracture. Under these special conditions the consolidation is never exuberant, there is no large callus and no exostoses. The callus forms a cement which unites the two bone fragments and the consolidation occurs with the minimum of deformity.

Obligatory Physical Education

The national committee on physical education, sports and social hygiene recently held a general meeting under the presidency of M. Henry Paté. Propositions presented by Mérillon and Hélitas concerning obligatory physical education were adopted unanimously, and it was shown that much progress has been made in this direction. M. Paté extended thanks to General Pershing, who, in the name of the American army, recently constructed near the Vincennes Wood a stadium which will hold more than 10,000 persons. This stadium was erected at the expense of the Americans and will be given over to the use of France. Furthermore, the Franco-American Union has made known that as a token of its regard for France and to aid in welfare work in France, 300 Foyers du soldat have been built and will be maintained at the expense of the Union in various parts of France, and that they will in reality become 300 centers of physical culture. The city of Paris will establish forty playgrounds and four stadiums on the site of the fortifications which are to be demolished.

This national committee on physical education, sports and social hygiene has just organized new courses in social hygiene at the Musée pédagogique. These courses are to be on eugenics, maternity and physical and moral education; alcoholism; venereal diseases, syphilis and gonorrhea; infectious diseases and tuberculosis; dietetics, and industrial hygiene.

Encouraging Ambidexterity in Children

At the recent meeting of the Académie de médecine, Dr. Armaingaud pointed out the loss—military, civil and economic—which results from an artificial disability imposed on young children, and therefore on adults, in allowing them to use only their right hand, so that the left hand is used merely as an auxiliary to the right. Speaking from a military point of view, Armaingaud called attention to the statement made by General Baden-Powell, chief of a British Army Corps during the war, to the effect that no one could doubt the value of ambidexterity. If both hands were used equally by everybody, instead of being used only occasionally, or by a few persons, as is the case today, the strength of the army would be increased notably. Armaingaud also pointed out the advantages of the ambidextrous use of both hands in the practice of surgery and obstetrics, and related the case of a professor of surgery, who, while chief surgeon of an ambulance during the war, received a serious wound in his right hand, but who, nevertheless, continued to operate with his left hand, being ambidextrous. He also enumerated a considerable number of other professions in which ambidexterity would more than double the output.

At this time, when the population of France is decimated by tuberculosis and alcoholism, and when the excess of births over deaths is less each year, it is not a matter of indifference to permit the population of France to continue what may be called a physiologic mutilation, one which may be made to disappear at will. Armaingaud proposed to the academy (1) to issue an appeal to the people of France asking that the mothers, in the interest of the nation and in the interest of defense of the country, teach their children from the first to use both hands equally; (2) to request the minister of public instruction to make the equal use of both hands obligatory in all the primary and secondary schools; (3) to urge the foundation of a prize to be awarded annually to the teacher in France who has been most successful in carrying out this most desirable reform.

Marriages

Frank Barnes Long, Capt., M. C., U. S. Army, Sedalia, Mo., to Miss Anna Ruby Dillard of Jefferson City, Mo., in New York City, March 31.

John Joseph Gailey, Waterbury, Conn., to Miss Harriet Blanche C. Cowan of Chicago, April 6.

Thomas Floyd Leatherwood, Minot, N. D., to Miss Louise Smith of Buckingham, Que., August 13.

Deaths

Mortimer Frank ⊕ Chicago; University of Illinois, 1901; aged 44; died at his home, April 21, from cerebral hemorrhage. He was a graduate of the Massachusetts Institute of Technology; ophthalmologist to Michael Reese and other hospitals; a member of the American Academy of Ophthalmology and Oto-Laryngology; editor of the *Bulletin of the Chicago Society of Medical History;* especially known for his enthusiastic interest in medical historical subjects; the possessor of an extensive collection of medical historical books, correspondence and incunabula; the author of interesting studies on "Caricature in Medicine" and on "Early Ophthalmologic Surgeons," as well as of numerous other medical historic essays. He had recently completed a translation of Choulant's History of Anatomical Illustration which it is believed will be of great use to anatomists, artists and art schools.

William Henry Lane, Buffalo; University of Vermont, Burlington, 1913; aged 37; a member of the Medical Society of the State of New York; a captain in the Medical Corps in the 74th Infantry, N. Y., N. G., and recommended for commission as first lieutenant, M. C., U. S. Army; also a graduate of the dental department of the University of Buffalo; at one time resident physician at the Massachusetts School for the Feeble-Minded, Waverly; for five years professor of physiology, pathology and radiography in the dental department of the University of Buffalo; an expert in roentgen-ray work; died at his home, April 9, from acute bronchitis.

William Peter Faust ⊕ **Major, M. C., U. S. Army,** Schenectady, N. Y.; New York Homeopathic Medical College, New York City, 1895; aged 45; a member of the staff of Ellis and Mercy hospitals, Schenectady; for about twelve years surgeon to the American Locomotive Works, and health officer of Schenectady; who went abroad with the Schenectady Base Hospital, and afterward instituted base hospitals for the British government, his last assignment to duty being at Base Hospital No. 33, and who was honorably discharged from the Army, January 24; died at his home, March 27, from acute nephritis.

Alexander D. MacDonald, Galen, Mont.; McGill University, Montreal, 1887; aged 58; formerly health officer of Kallispell, and surgeon to the Flathead County Hospital, and Kallispell City Hospital; formerly president of the Flathead County Medical Society; thrice elected a member of the house of representatives and once speaker of the house; for the last four years superintendent of the Montana State Tuberculosis Sanatorium, Deer Lodge; died in that institution, April 6, from pneumonia.

William Henry Elliott, Savannah, Ga.; University of Virginia, Charlottesville, 1858; aged 82; chief surgeon of the Central of Georgia Railway, and Ocean Steamship Company from 1891 to 1913; assistant surgeon of the Savannah Volunteer Guard, and later of the First South Carolina Infantry, in the Confederate service during the Civil War; at one time president of the Medical Association of Georgia; for several years acting assistant surgeon, U. S. P. H. Service; died at his home, March 31.

William Asbury Hall ⊕ Minneapolis; Albany (N. Y.) Medical College, 1875; aged 65; once president of the Minnesota State Medical Association and Hennepin County Medical Society; a member of the surgical faculty of the University of Minnesota, Minneapolis; attending surgeon to St. Mary's and the Minneapolis City Hospital; consulting surgeon to the Northwestern Hospital; chief surgeon to the Minneapolis and St. Louis Railroad; died at his home, April 12, from cerebral hemorrhage.

Willis Sanford Hobson ⊕ Cleveland; Western Reserve University, Cleveland, 1898; aged 43; a specialist on diseases of the ear, nose and throat; assistant professor of histology in his alma mater, and assistant in medicine in the Lakeside Hospital Dispensary; visiting physician to the Children's Fresh Air Clinic; from 1915 to 1918 treasurer of the Cleveland Medical Association; died in the Peter Bent Brigham Hospital, Boston, April 5.

Stewart Donald MacKenzie, Edmonton, Alta.; McGill University, Montreal, 1901; aged 40; an officer of the Canadian Army Medical Corps; who had been in command of a military hospital at Brandshott Camp, England, and France;

⊕ Indicates "Fellow" of the A

and was discharged from the service in February; fell from the window of an apartment in New York City, March 27, and died from his injuries a few hours later in Bellevue Hospital.

Giles Hathcock ⊕ Lula, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1888; aged 57; professor of materia medica and therapeutics in the Hospital Medical College, Eclectic, Atlanta, and later professor of practice of medicine in his alma mater; for many years local surgeon of the Southern Railroad; died on a train between Lula and Atlanta, April 1, from cerebral hemorrhage.

Nathan Sidney Everhard ⊕ Wadsworth, Ohio; Western Reserve University, Cleveland, 1867; aged 78; local surgeon of the Erie Railway for many years; president of the Garfield Injector Company, Ohio Match Company, Ohio Salt Company, Ohio Boxboard Company, and Wadsworth Savings and Trust Company; who underwent operation at Mount Sinai Hospital, Cleveland, March 26; died, April 3.

Sheldon Guthrie Evans ⊕ **Capt., M. C., U. S. Navy;** College of Physicians and Surgeons, Baltimore, 1890; aged 49; a member of the Association of Military Surgeons of the United States; who entered the Navy, Nov. 18, 1890, and whose last station was at League Island Navy Yard, Philadelphia; died in Lankenau Hospital, Philadelphia, March 10.

Edward Marshall Hyland, Utica, N. Y.; Bellevue Hospital Medical College, 1883; aged 60; a member of the Medical Society of the State of New York; surgeon in charge of St. Elizabeth's Hospital; visiting surgeon to the Utica General Hospital, and physician and surgeon to St. Joseph's Infant Home and Maternity Hospital; died at his home, April 11.

Gustav A. Renz, St. Paul; University of Pennsylvania, Philadelphia, 1884; aged 58; also a graduate in pharmacy; pathologist to St. Joseph's Hospital; gynecologist to the City and County, St. Luke's and Norwegian hospitals; for fourteen years an official of the St. Paul Department of Health, and health officer in 1900; died at his home, April 13.

Joseph Bernard Monahan, New Haven, Conn.; Darthmouth Medical School, Hanover, N. H., 1894; aged 50; a member of the Connecticut State Medical Society; a specialist in tuberculosis; and for a time a member of the staff of the White Haven (Pa.) Sanatorium; medical inspector in the public schools; died at his home, March 23.

John W. Martin, New York City; New York University, New York City, 1880; visiting physician to the Northwestern Dispensary from 1882 to 1885, and attending physician from 1885 to 1886; died in a shooting gallery in Chicago, April 14, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent.

William Wright Walcott ⊕ **Lieut., M. C., U. S. Army,** Natick, Mass.; Harvard Medical School, 1905; on duty with the 101st Engineers, American Expeditionary Forces, in France; formerly state inspector of health and later district health officer under the Massachusetts State Department of Health; died in France, March 16.

William LaFayette Cowper ⊕ **Lieut., M. C., U. S. Army,** Michigan, N. D. (license, North Dakota, 1898); aged 43; who after graduation from the Second Officers' Training Camp, Fort Snelling, Minn., was made surgeon on a U. S. Army transport; died in a hospital in Liverpool, March 9, from pneumonia.

Louis Constant Gobron, Rochester, N. Y.; Bellevue Hospital Medical College, 1888; aged 65; died in the Lee Hospital, Rochester, April 6, from the effects of poison, believed to have been self-administered, with suicidal intent, while despondent on account of illness and threatened blindness.

Joseph Cummings Poffenberger, Sunbury, Pa.; Jefferson Medical College, 1912; aged 31; a member of the Medical Society of the State of Pennsylvania; recommended for commission as first lieutenant in the Medical Reserve Corps, U. S. Army; died at his home, April 5, from pneumonia.

William Kirkpatrick Reid, Charlotte, N. C.; New York University, New York City, 1891; aged 51; a member of the Medical Society of the State of North Carolina; for several years city physician of Charlotte; died in the Presbyterian Hospital in that city, April 5, from septicemia.

Joseph Arthur Marchessault ⊕ Ashland, Wis.; University of Victoria College, Coburg, Ont., 1877; aged 67; health commissioner of Ashland; once president of the Ashland County Medical Society; died at his home, about April 1, from septicemia, due to an infected toe.

Phillip Rexford Waughop ⊕ Seattle; Harvard Medical School, 1894; aged 51; a specialist in urology; government physician and health officer in the Hawaiian Islands from 1900 to 1903; an authority on leprosy; died at his home, April 2, from pneumonia.

William Knisely Cherryholmes ⊕ Hamilton, Ohio; Bellevue Hospital Medical College, 1884; aged 58; a specialist in diseases of the eye, ear, nose and throat; died at the home of his nephew at Mansfield, Ohio, March 31, from pneumonia following influenza.

Thomas Milton Morrow, Altoona, Pa.; Baltimore (Md.) Medical College, 1898; aged 51; a member of the Medical Society of the State of Pennsylvania, and Altoona Academy of Medicine and Surgery; died in the Altoona Hospital, April 5, from uremia.

Claudius Edward Richard King, San Antonio, Texas; George Washington University, Washington, D. C., 1859; aged 79; a member and first president of the State Medical Association of Texas; a Confederate veteran; died at his home, March 14.

Galusha Burchard Balch, Yonkers, N. Y., and Richmond, Mass.; College of Physicians and Surgeons in the City of New York, 1860; aged 80; assistant surgeon of U. S. Volunteers during the Civil War; died at his home in Richmond, April 8.

Frank M. Fogle, Rowlesburg, W. Va.; College of Physicians and Surgeons, Baltimore, 1896; aged 44; a member of the West Virginia State Medical Association; director of the Rowlesburg Bank; died at his home, April 5, from pneumonia.

George W. Wroten, Louisa, Ky.; Pennsylvania Medical College, Philadelphia, 1861; aged 81; surgeon in the Confederate service during the Civil War; for ten years editor of the Big Sandy *News;* died at his home, April 9.

Paul Haddock Tracy, New York City; College of Physicians and Surgeons in the City of New York, 1893; aged 53; for many years a surgeon on transatlantic steamships; died in New York City, March 29, from heart disease.

James Madison Graham ⊕ **Lieut., M. C., U. S. Army,** Fruita, Utah; Medical College of Ohio, Cincinnati, 1902; aged 40; died in U. S. General Hospital No. 21, Denver, about April 6, from tuberculosis.

John T. Newhouse, Chesterfield, Ind.; Curtis Physio-Medical Institute, Marion, Ind., 1890; aged 71; a clergyman of the Christian Church for half a century; died at the Muncie (Ind.) Hospital, April 8.

Orizaba Manasco, Townly, Ala.; Birmingham (Ala.) Medical College, 1905; aged 36; a member of the Medical Association of the State of Alabama; died in a hospital in Little Rock, Ark., April 9.

Marcus Ernest Petersen, Brooklyn; Long Island College Hospital, Brooklyn, 1896; aged 47; formerly a member of the staff of the Bushwick Hospital; died at his home, April 7, from heart disease.

Jesse H. Lanam, Franklin, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1882; aged 71; died at the home of his niece, near Seymour, Ind., April 6, from cerebral hemorrhage.

Jacob Sampson Goldberg, New York City; Cornell University, New York City, 1918; aged 25; died in Mount Sinai Hospital, New York City, February 2, from staphylococcus infection.

Albert Alphonse Appel, Philadelphia and Haddon Heights, N. J.; Hahnemann Medical College, Philadelphia, 1898; aged 48; died in his office in Philadelphia, April 9, from heart disease.

Robert Arthur Gilliford, Olsburg, Kan.; Kansas Medical College, Topeka, 1899; aged 49; died at the home of his brother in Olsburg, March 13, from cerebral hemorrhage.

Frank A. Stickney, Kilbourne, Ohio; Columbus (Ohio) Medical College, 1880; aged 67; died at his home, March 25, from chronic nephritis.

William Henry Pulford, Delaware, Ohio; Cleveland University of Medicine and Surgery, 1894; aged 87; died at his home, January 16.

Ostrander C. Pollock, Shobonier, Ill.; Eclectic Medical Institute, Cincinnati, 1882; aged 79; died at his home, March 21.

Frederick Alfred Schlanger ⊕ Pittsburgh; University of Pittsburgh, 1909; aged 30; died in Atlantic City, N. J., about April 6.

David Andrew McCleary, Camden, Ind.; Rush Medical College, 1883; aged 62; died at his home, March 28.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry, at its recent annual meeting, discussed at length the revision of New and Nonofficial Remedies and the problems of investigating proprietary articles, both of those voluntarily submitted to the Council, and also of those which the Council takes up on its own initiative. Other subjects of special interest to the medical profession, that were considered and acted on at this meeting, were:

Nonspecific Protein Therapy.—The Council decided to publish, at an early date, a report on the unscientific and commercial propaganda which is being conducted in the interest of establishing the use of therapeutic agents of this character. The Council believes that the profession should be warned of the specious and unproved arguments which are being circulated concerning the results obtained from preparations of this character.

Serums and Vaccines.—The Council appointed a committee to study the problems of serum and vaccine therapy. This, to the end that it might publish in THE JOURNAL for the information of the medical profession, the evidence obtainable regarding both the value of, and also the dangers incident to, the use of serums and vaccines. The study is to include (*a*) an exhaustive review of the literature; (*b*) a tabulation of the experiences of the Army and Navy as revealed in available official reports, and (*c*) a review of the data relative to these therapeutic agencies available in various clinics of scientific standing.

Hay Fever Pollen Extracts.—A special committee was appointed to study and report on the present status of pollen extracts in the prophylaxis and treatment of hay fever. This investigation is to include, especially, the rationale of the pollen protein mixtures now being advertised.

Supervision of Potent Drugs by the U. S. Public Health Service.—The Council adopted a resolution urging the enactment of a law by Congress which shall require the Public Health Service to extend its present work of testing the toxicity and efficiency of serums, vaccines, toxins, and antitoxins, to cover that of testing and standardizing other potent remedies that are used hypodermically or intravenously. The selection of such products as are a source of special danger to the public health, unless standardized and tested as to toxicity, would be left to the judgment of the Surgeon-General of the Public Health Service. Some of the preparations which might call for such standardization and testing are extracts of glands such as the pituitary gland, etc., and highly toxic drugs, such as arsphenamine, neoarsphenamine, digitalis preparations, etc.

Arsphenamine.—The Council passed this resolution: "That the control of the purity and potency of arsphenamine by the Public Health Service shall be continued after the conclusion of peace, and the control of the price be placed under an appropriate government agency."

Articles Described, But Not Accepted.—The Council has long recognized that there are proprietary preparations of therapeutic value which are so exploited as to be inadmissible to New and Nonofficial Remedies. The claims made for such preparations are unproved and, in many instances, are palpably false, and such claims and other violations of the rules of the Council make the acceptance of the products impossible. The Council decided to describe, for the information of physicians, articles of this character, and at the same time to give the reasons which stood in the way of including these preparations in N. N. R. The Council further requested that descriptions of articles of this character might be published in THE JOURNAL, and decided that these descriptions should later be published in a separate section of New and Nonofficial Remedies.

Cooperation in the Teaching of Pharmacology and Therapeutics.—A committee on Education was appointed to revive the pre-war work of the Council in establishing fuller cooperation between the Council and the teachers of therapeutics and pharmacology in medical schools. The object in view is that of bringing to the attention of third- and fourth-year medical students the therapeutic and pharmacologic problems which beset the young practitioner and showing the value of the Council's work in helping the profession to solve these difficulties.

Radium Water Therapy.—Another committee whose report should prove instructive and important is that appointed to investigate the present status of the therapeutic value of radium water therapy.

The following members of the Council on Pharmacy and Chemistry were in attendance:

C. L. ALSBERG, Chief of the Bureau of Chemistry, U. S. Department of Agriculture.

R. A. HATCHER, Professor of Pharmacology, Cornell University Medical College.

JOHN HOWLAND, Professor of Pediatrics, Johns Hopkins University Department of Medicine.

REID HUNT, Professor of Pharmacology, Harvard University Medical School.

HENRY KRAEMER, Professor of Pharmacognosy, University of Michigan, College of Pharmacy.

W. T. LONGCOPE, Bard Professor of the Practice of Medicine, College of Physicians and Surgeons of Columbia University.

G. W. MCCOY, Director of the Hygienic Laboratory, U. S. Public Health Service.

F. G. NOVY, Professor of Bacteriology, University of Michigan.

W. W. PALMER, Associate Professor of Medicine, College of Physicians and Surgeons of Columbia University.

W. A. PUCKNER, Secretary of the Council on Pharmacy and Chemistry and Director of the Chemical Laboratory of the American Medical Association.

L. G. ROWNTREE, Professor of Medicine, University of Minnesota.

G. H. SIMMONS, Chairman of the Council, and Editor of THE JOURNAL of the American Medical Association.

TORALD SOLLMANN, Professor of Pharmacology and Materia Medica, Medical Department, Western Reserve University.

JULIUS STIEGLITZ, Vice-Chairman of the Council, and Professor of Chemistry, University of Chicago.

W. A. PUCKNER, Secretary.

Correspondence

THE CADUCEUS AS A MEDICAL MOTOR CAR EMBLEM

To the Editor:—Since the American Medical Association abandoned the device of the Red Geneva Cross, because it rightfully belonged exclusively to the American Red Cross, in 1909, it was proposed to adopt a new emblem which would be distinctively medical. In 1912, the knotty rod and serpent of Æsculapius with the colors scarlet and gold were found to be the ancient inheritance of the physician. Notwithstanding this, in the advertising columns of THE JOURNAL, the caduceus of Mercury is offered to be used on the doctor's motor car. During the gasless Sundays of last fall a green cross was very largely employed to distinguish the physician and gave him the privilege of driving to his practice.

Possibly the fact that the enchanted wand of Mercury is used by the United States Army has misled some to think that it is the proper one to carry as the sign of medicine.

Mercury, the Roman god, is identical with the Greek god Hermes, and was considered the god of diplomacy, arts, sciences, commerce, gain and riches, especially of sudden and unexpected riches and of good luck at the games. He was usually represented with a purse in one hand, his magic caduceus in the other, and was supposed to preside over the commerce of the Romans.

The caduceus is an evolution of the staff of Hermes, which was an olive branch with garlands, for which the two serpents were substituted later in the position of coitus, meaning reproduction and increase, for without these the caduceus would be impotent. Then wings were added to indicate the speed of Mercury as a divine messenger, and became a symbol of power that produced wealth and was supposed to be the enchanted wand of prosperity. The words commerce, merchant, market and mercury all come from the same Latin root, *merx*, *mercis*, goods, and *mercor*, to traffic; hence, this wand is appropriately placed on delivery cars, railway trains and steamships.

Green is not a medical color but has long been carried by the hospital; therefore, the green cross means nothing to the physician himself.

In mythology, history and sacred scripture, man has always considered the serpent as representing power, wisdom and health. Twined about the knotty rod it was associated with the statue of Æsculapius at Epidaurus and became the earliest symbol of the healing art, as an expressive representation of power, support and protection in the difficult and knotty problems arising in the management of disease.

Scarlet and gold have always been regarded as characteristically medical colors. In the king's retinue, during occasions of state, the physician wore a scarlet cloak to distinguish him from the other professions. In the rural districts of Massachusetts a red flag was displayed from the farm house to notify the physician on his rounds that his services were required. In alchemy it is interesting to find that the philosopher's stone, when known as the elixir of life, was a red tincture, and as the key of wisdom, a red powder, and as a remedy for all diseases and to prolong human life, the alchemist mentions particularly a red stone.

Gold was spoken of by Gerber, the father of chemistry, who personified it as the "only pure and healthy man," and it was made the symbol of the sun, which orb had the greatest influence over disease.

These elements of the knotty rod and serpent, with scarlet and gold, have been embraced in the device of a simple emblem for the medical profession and accepted by the American Medical Association; hence, it is a mistake to persuade the doctor to wear a commercial badge, but he should be taught throughout the country, in the Army as well as in civil practice, to carry one correct and uniform design.

Further particulars and explanations can be found in The Journal, April 24, 1909, p. 325; the *Red Cross Bulletin*, July, 1909, p. 40, and *New York Medical Journal*, May 30, 1914.

Samuel P. Gerhard, A.M., M.D., Philadelphia.

[Comment.—It has been frequently contended that the wand of Mercury is not the proper symbol for the medical profession, as it has no medical significance; in fact, its adoption by the Army Medical Corps might be considered a reflection on the interest which we, as a nation, take in things classical. If the question is asked why the wand of Mercury was ever adopted as the symbol of the Medical Corps, the reply is rather difficult; surely not because the caduceus was used by Mercury *as conductor of the souls of the dead to the world below.* As pointed out by McCulloch (*Military Surgeon*, **41**:137 [Aug.] 1917), the emblem may have been borrowed originally from the Public Health Service, in which it had been used for many years. Churchill, the London medical publisher, used it on title pages two generations ago; but whoever recommended its use as a medical emblem in this country has either been conducted by Mercury, his titular deity, to join the souls of the dead in the world below, or is keeping unusually quiet.

However, the English are also said to have fallen into the same error. McCulloch tells us that the first use of the caduceus in medical heraldry was doubtless in the crest of Henry VIII's physician, the learned Sir William Butts—the same Sir William who appears in Shakespeare's drama of Henry VIII (V, ii, 11):

Cranmer [*Aside.*] 'Tis Butts,
The King's physician; as he past along,
How earnestly he cast his eyes upon me.

The Greek poets refer to Hermes or Mercury as giving sleep with the magic wand to whomsoever he chose; hence Milton calls the wand "his opiate rod," in Paradise Lost, xi, 133. Also Erasmus Darwin (grandfather of Charles Darwin) in Loves of the Plants, ii, 291, says:

So, with his dread caduceus, Hermes led
From the dark regions of the imprisoned dead;
Or drove in silent shoals the lingering train
To Night's dull shore and Pluto's dreary reign.

Such allusions as these may have given rise to the false conception of Mercury and caused the reader to suppose that if he could wave the "opiate rod" he could administer medicaments as well. Be that as it may, the first use of the caduceus by the Medical Department of our army was on the chevron of the uniform of the hospital steward, in 1856, although it was not employed by the medical officers until 1902.

As for the staff and serpent of Æsculapius: There is no doubt that this is a much more appropriate emblem for the medical profession than the wand of Mercury. It may be interesting to note that this emblem is now worn by the Royal Army Medical Corps.

Those who believe that preventive medicine is the crowning glory of the profession, as it certainly would seem to be, at this time, might prefer as an emblem, Hygeia (the goddess of health and the daughter of Æsculapius), surrounded by symbols representing her close companions—air, water, light, food, exercise, sleep, etc. Thus we should have the culmination of the trinity composed of Apollo, the sun-god and the very ancient god of medicine; Æsculapius, considered to be the son of Apollo; and the beautiful daughter of Æsculapius—Hygeia—at whose shrine perhaps more of the medical profession of today would be willing to worship than at the shrine of Æsculapius.—Ed.]

"THE NEEDS OF MEDICAL EDUCATION AS REVEALED BY THE WAR"

To the Editor:—I have read with a great deal of interest the article on medical education by Munson, in the last number of The Journal, and also an editorial and the letters of Vaughan and Munson, and I am writing to you to suggest that in any statistical study made by the Surgeon-General in regard to medical reserve officers it would be of interest to know:

1. The number of graduates of each medical school that were commissioned.
2. The number from each medical school that were discharged from the service prior to November 11, for any reason.
3. The number of graduates of every medical school living Nov. 11, 1918.

The first two items, of course, could only be supplied by the Surgeon-General's Office, while the latter, I imagine, could be readily supplied by The Journal if the Hollerith system was used for the directory.

The subdividing of the discharges under the head of different causes would be of interest, although, I believe, would give a mistaken impression, as there was a tendency I noted to "deal lightly" in regard to discharges, and thus many discharges for physical disability might well and properly have been included under other headings.

Gordon Wilson, M.D., Baltimore.

IDENTITY OF THE POPPY IN FLANDERS' FIELDS

To the Editor:—In the late Surgeon McCrae's poem "In Flanders' Fields," prominent mention is made of poppies in bloom, and local discussion has arisen as to whether they are of the variety that yields opium; and if so, whether there is not a deeper sense, almost therapeutic, in the words: "We shall not sleep though poppies grow in Flanders' field."

If this is *Papaver somniferum*, why is the world supply of opium drawn from Asiatic sources, and why may not the plant be cultivated successfully in America for therapeutic purposes? *Or was the allusion in the verses merely an* example of poetic license?

George Homan, M.D., St. Louis.

[Comment.—It seems possible that the line in MacCrae's poem "We shall not sleep though poppies blow in Flanders' fields" was written advisedly. No doubt the poppies that grow in Flanders' fields are *Papaver rhocas*, red poppy, or corn poppy. The capsules yield a milky juice, and an extract has been prepared having the properties of opium. The effect is very feeble, however, and the plant is of value mainly for its scarlet coloring matter.

The poppy which yields opium is *Papaver somniferum* and is generally believed to be a native of Asia Minor. It grows wild in southern Europe and even in England. It is successfully cultivated for its opium content in India, China, Japan, Asiatic Turkey, and other places. In Europe and the United States it is cultivated for its seeds, which yield a fixed oil. —Ed.].

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RADIUM TREATMENT OF ARTHRITIS DEFORMANS

To the Editor:—Please give me the most recent information on the treatment of nodose rheumatism (arthritis deformans) by means of radium, and also the places to obtain this substance.

L. L. BIAMÓN, M.D., San Juan, P. R.

ANSWER.—According to New and Nonofficial Remedies, it has been claimed that radium emanation is of value in all forms of nonsuppurative, acute, subacute and chronic arthritis (syphilitic and tuberculous excepted), in chronic muscle and joint rheumatism (so-called), in arthritis deformans, in acute and chronic gout, in neuralgia, sciatica, lumbago, and in tabes dorsalis for the relief of lancinating pains. Its chief value is in the relief of pain. The relief of pain is well established; in consequence, improvement is sometimes observed; but curative results appear to be lacking. Due conservatism should be exercised in judging of the favorable reports published.

The following references may be consulted:

Rowntree, L. G., and Baetger, W. A.: Radium in Internal Medicine, THE JOURNAL, Oct. 18, 1913, p. 1438.

Chase, A. F., and Fine, M. S.: The Use of Atophan and Radium Emanation in the Treatment of Gout and Arthritis, THE JOURNAL, Sept. 12, 1914, p. 945.

McCrudden, F. H., and Sargent, C. S.: Influence of Radium Water Therapy on Creatinin and Uric Acid Metabolism in Chronic Arthritis, *Am. J. M. Sc.*, **156**: 702 (Nov.) 1918.

New and Nonofficial Remedies lists radium preparations prepared by the Radium Company of Colorado, Denver; the Radium Chemical Company, Pittsburgh; W. L. Cummings Chemical Company, Lansdowne, Pa.; Radium Ltd., U. S. A., New York, and Schieffelin & Co., New York. These companies may be addressed as to their available preparations for use in arthritis deformans.

"TREATMENT OF CHRONIC ASTHMA"

To the Editor:—In THE JOURNAL, March 8, 1919, p. 713, appears an article, abstracted from a foreign journal, in regard to the treatment of asthma with emetin hydrochlorid and sodium iodid. Will you kindly state what the minimum and maximum dose of sodium iodid intravenously should be? In the article referred to it is stated that the treatment is to be begun with 20 c.c., increasing to 120 c.c., but the strength of the solution is not given.

M. O. SHIVERS, M.D., Colorado Springs, Colo.

ANSWER.—Machado's communication (*Gazeta Medica da Bahia*, **50**:97 [September] 1918) refers to three patients treated with intravenous injections of sodium iodid. The first received twenty injections with a total of 142 gm. of sodium iodid, which corresponds to a concentration of 8.65 per cent., if it is considered that the first injection was of 20 c.c. and every succeeding one was increased 10 c.c. until reaching 100 c.c. per injection. The patient received a total volume of 440 c.c. in the first eight injections, followed by twelve injections of 100 c.c. each, forming a total of 1,640 c.c. with 142 gm. of iodid. This gives a concentration of $\frac{14,200}{1,640} =$ 8.65 per cent. In the second and third cases, by a similar computation, 10.92 per cent. and 9.75 per cent., respectively, represent the strength of solutions, giving an average for the three series of 9.77 per cent., or about 10 per cent.

VERACOLATE

To the Editor:—Please advise me as to the opinion of the Council on Pharmacy and Chemistry with regard to the "Veracolate" tablets.

D. W. A.

ANSWER.—The Council on Pharmacy and Chemistry examined Veracolate (the Marcy Company) in 1915 (THE JOURNAL, April 24, 1915, p. 1440), and found it to be semisecret in composition, unscientific in combination, and exploited under unwarranted claims. The following nonquantitative formula was given by the Marcy Company: "a compound containing bile acids, sodium glycocholate, sodium taurocholate with cascara sagrada and phenolphthalein."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

GEORGIA: Atlanta and Augusta, June 5-6. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 12. Sec., Dr. J. R. Judd, Beretania St., Honolulu.

MASSACHUSETTS: Boston, May 13-15. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 10. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 9-11. Sec., Dr. George H. Jones, State House, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, State House, Columbus.

SOUTH CAROLINA: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 13-14. Sec., Dr. A. B. De Loach, Exchange Bldg., Memphis.

Alabama January Examination

Dr. S. W. Welch, chairman, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 11-14, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 4 passed and 7 failed. Three candidates were licensed through reciprocity, and one on his retirement from the United States Public Health Service. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1918)	75
Emory University		(1918)	80.7
Meharry Medical College		(1918)	75.2
Vanderbilt University		(1918)	84.5
	FAILED		
Birmingham Medical College		(1914)	68.1
Atlanta College of Phys. and Surgs.		(1913)	62.1
Chicago College of Medicine and Surgery		(1918)	65
Meharry Medical College		(1917) 67.4; (1918)	70.6
Memphis Hospital Medical College		(1911) 65.1; (1913)	62.2

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
Meharry Medical College		(1914)	Missouri
Memphis Hospital Medical College		(1913)	Tennessee
University of Nashville		(1907)	Tennessee
University of Virginia		(1913)	U.S.P.H.S.

Missouri January Examination

Dr. George H. Jones, secretary of the Missouri State Board of Health, reports the written examination held at St. Louis, Jan. 28-30, 1919. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Twenty-one candidates were examined, all of whom passed. Eight candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Kansas		(1918)	85.3
Johns Hopkins University		(1907)	86.1
Missouri Medical College		(1897)	80.3
St. Louis Coll. of Physicians and Surgeons		(1918)	75.1, 75.1, 75.1.
St. Louis University		(1918) 85.5, 89.9; (1919)	88.1
Washington University		(1905) 84.1; (1919)	86.1, 86.1, 86.3, 86.9, 87.1, 87.1, 87.2, 88, 90.4.
Temple University		(1918)	86.9
Meharry Medical College		(1917)	75.4

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1905)	Maryland
University of Colorado		(1913)	Colorado
Chicago College of Medicine and Surgery		(1914)	Iowa
University of Illinois		(1917)	Illinois
Medical College of Indiana		(1880)	Indiana
Louisville Medical College		(1888)	Indiana
St. Louis University		(1910)	Illinois
University of Toronto		(1910)	N. Dakota

Book Notices

Infecciones de Tipo Gripal. Por los Doctores Antonio Piga, Médico de la Real Familia, y Luis Lamas, Profesor del Instituto de Alfonso XIII, con Notas de Terapéutica Clínica y Epidemiología de los Doctores Albasanz, Carro, Fernández Sanz, Grinda, Jiménez Asúa, Jiménez Encinas, Juarros, López Durán (B.) Marañón, Márquez, Mut, Oliver, Palancar, Perera, Sievert, Tolosa Latour y Verdes Montenegro. Tomo 1. Paper. Pp. 309. Madrid: Talleres Tipográficos de "Los Progresos de la Clínica," 1919.

The authors state in the preface that this book was not written hastily to take advantage of the interest in influenza aroused by the present epidemic, but that it is a study planned a long time ago for which the necessary material has been collected during the intervening period. "It is written," they say, "in the interest of science, with respect for truth, and with the desire of cooperating, however humbly, in the progress of Spanish medicine." The volume consists of eight chapters which discuss extensively the historical, clinical, and social aspects not only of epidemic influenza but of all influenzal infections. The influence of atmospheric changes on the appearance of such infections is emphasized, and stress is placed on the point that infection will most probably follow a rainy season. The necropsies and laboratory investigations made by the authors have enabled them to form an individual opinion as to treatment. Their chapter on this subject is divided into four sections, the first two concerning the history of anti-influenzal therapeutics, and the remainder "naturotherapy" or "leucogenous" treatment, which they consider the proper treatment of influenza. They state, however, that this treatment is unnecessary when the disease appears in mild form. In the class of leucogenous remedies they place the nucleinate of sodium, the metallic ferments, the essence of turpentine, and antidiphtheric serum. The book constitutes a minute review of the literature on influenzal diseases.

Accidents and Emergencies: A Manual of the Treatment of Surgical and Medical Emergencies in the Absence of a Physician. By Charles W. Dulles, M.D., Consulting Surgeon to the Rush Hospital. Eighth edition. Cloth. Price, $1 net. Pp. 164, with 45 illustrations. Philadelphia: P. Blakiston's Son & Co., 1918.

The repeated reprinting of this book indicates in a degree its usefulness to the laity, for whom it is intended. Undoubtedly information readily accessible in the emergencies of daily and family life serves a frequently recurring need. If a book containing such information does not overstep the boundary between the things a lay person may do and those which a surgeon or physician is alone competent to carry out, then it is of value in the home, the school, the playground or on the summer outing, and perhaps for the shop or factory where trained professional help is not provided. On this basis this book may be recommended for the purpose for which it was designed.

Introduction to Organic Chemistry. By John Tappan Stoddard, Professor of Chemistry in Smith College. Second edition. Cloth. Price, $1.50 net. Pp. 423. Philadelphia: P. Blakiston's Son & Co., 1918.

As the title indicates, this is an introduction to organic chemistry. Each phase of the subject is treated briefly and to the point. The book is to be recommended as presenting the elementary general principles of organic chemistry in an acceptable manner. From the standpoint of medical instruction, however, it does not connect these general principles closely enough with medicinal products. Some important subjects are too briefly considered; for instance, alkaloids and proteins are dismissed with but three pages each.

The Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics at the Northwestern University Medical School. Third edition. Cloth. Price, $8.50 net. Pp. 1089, with 949 illustrations. Philadelphia: W. B. Saunders Company, 1918.

As the author points out, the sum of obstetric knowledge has not been greatly advanced, since the publication of the second edition, but there have been several valuable additions. More important, however, time has been allowed for ascertaining the true valuation of several obstetric problems and methods that had not been thoroughly tried out up to that time. He mentions specifically the pregnancy reaction of Abderhalden, the relation of the endocrine glands to gestation, twilight sleep, and the urinary tests for the toxemias of gestation. Amplifications have been made in such obstetric problems and methods as anesthesia, analgesia, cesarean section and the treatment of contracted pelvis. In the treatment of eclampsia, more prominence is given to conservative methods, and as a result of the advance in the use of the rectal method of examination during labor, the section on the conduct of labor has been revised with this point in view. This textbook continues to be one of the most complete and best illustrated one volume work on practical obstetrics in English.

Social Medicine, Medical Economics and Miscellany

SOCIAL INSURANCE

The March number of the American Labor Legislation Review, published by the American Association for Labor Legislation, contains two articles on social insurance presented at the twelfth annual meeting of the association held at Richmond, Va., Dec. 27-28, 1918.

NEXT STEPS IN THE UNITED STATES

The president of the association, Prof. Samuel McCune Lindsay, in his presidential address discussed "Next Steps in Social Insurance in the United States." After reviewing the aims of the association and its activities during the past twelve years, he states that "social insurance is fundamental and vital to the aims and even to the very existence of the association, and that it lies at the heart of the most promising solution of the great task of social and industrial reorganization and reconstruction which the war has forced upon us." He then discusses the developing interest in social insurance in this country and the influence of governmental activities through the War Risk Insurance Bureau, and concludes that the next steps in social insurance in the United States are:

1. Provision for the most liberal conversion of war risk insurance for soldiers and sailors on terms equitable to the public.
2. Extension of similar insurance protection to all civilian employees of the government.
3. Development of health insurance for all governmental employees, and its extension as rapidly as possible to all citizens.
4. Establishment of state administered health insurance and insurance against accident, invalidity and old age as well as death for all industrial workers.

HEALTH AND OLD AGE INSURANCE IN OHIO

In the same number of the Labor Legislation Review, there is an article on "Health and Old Age Insurance in Ohio," by Mr. John A. Lapp, director of investigations of the Ohio Health and Old Age Insurance Commission. There are in that state approximately 5,250,000 people, 2,250,000 of whom are engaged in gainful occupations; 1,476,000 are under 14; 168,000 are over 70; 18,000 are inmates of state institutions; 4,850 are in state prisons and corrective institutions; 8,000 are in county infirmaries; 6,000 are in children's homes; 3,000 are in homes for the aged; 300,000 are supported either a part or all of the time by some form of public or charitable relief. Of the entire population of the state, 150,000 are disabled by sickness all the time. The investigations of the Ohio commission show that working people suffered an average sickness disability of nine days a year; that the burden that the worker is compelled to bear involves three factors, loss of wages, cost of medical care and loss of working power, and that the primary object of health insurance should be the restoration of the physical man to working efficiency. To accomplish this it is necessary to keep the incapacitated workman and his family from dependency until he is restored to efficiency. The objections to health insurance are thus summarized: 1. The cost is prohibitive. 2. The proposed plan fails to protect the unemployed and the casually employed. 3. The aim of legislation should be the prevention of sickness and not compensation for losses. 4. Industry and society are not liable for sickness. 5. Compulsory state health insurance is paternalistic and interferes with personal liberty. 6. Living wages will enable the worker to take care of himself.

Replying to the first, Lapp shows that health insurance, applied to 1,000,000 industrial workers in Ohio, will cost about $30,000,000 annually, and that existing sickness already costs the people more than twice that amount, a burden at present resting on the industrial worker and his family. The answer to the second objection is that social insurance does not apply to the unemployed or the pauper; that its function is to prevent people from becoming dependent, but that when they do it is the function of other agencies than social insurance to care for them. The unemployed have no wages to insure. If a man is not employed, he loses no wages when he is sick. Insurance cannot apply where there is no loss. To the objection that prevention rather than insurance should be undertaken, Lapp replies that they are not antagonistic but complementary and that neither can take the place of the other. To the objection that industry and society are not liable for sickness, he points out that all investigations have agreed that sickness results from three factors, the individual, the occupation and society at large, and that the burden must be distributed in proportion with the responsibility. The fifth objection, that of paternalism, Lapp says has been brought against every good measure that has been proposed in this country in the last fifty years. The sixth argument, that payment of a living wage will make state health insurance unnecessary by making it possible for each individual to carry his own burdens, Mr. Lapp denies, on the ground that it fails to take account of the risks of living which cannot be borne by the individual. "It is only by combining with others through forms of insurance that the gamble of life is eliminated. The most thrifty cannot make their life secure, because no one can tell what calamities of sickness and old age invalidity will be met. Thrift without insurance is often a delusion. There is no other way of assuring a living wage, covering present comforts and care in sickness and old age, except by insurance, and there is no way of providing adequate insurance at a reasonable cost except by making it universal through the state."

REPORT OF PENNSYLVANIA COMMISSION

The Pennsylvania Health Insurance Commission has made a tentative report in the form of a bill continuing the commission and authorizing a more extended study of the advantages and disadvantages of the proposed health insurance plan in Pennsylvania. The bill creates a health insurance commission authorized to continue the investigation begun by the existing commission; to make a study of proposed and existing systems of health insurance for this and other countries; to study possible remedial legislation intended to provide adequate medical care for employees and their families during sickness, to meet the wage loss suffered by employees during sickness, and to stimulate state wide interest and active work in sickness prevention. The commission is authorized to hold public meetings in different parts of the state, and is instructed to present to the general assembly of 1921 a full and final report containing such recommendations for legislation or otherwise as it may deem proper. The commission is to consist of three senators and three representatives of the house of representatives appointed by the speakers of the two houses, respectively, and five other persons not members of the general assembly to be appointed by the governor. The usual powers of organization and investigation, administering oaths, etc., are provided. The commissioner of health and the commissioners of labor and industry of the state are directed to cooperate. Twenty-five thousand dollars is appropriated for the expenses of the commission.

Medicolegal

Conditions Warranting Requirement of Vaccination

(Hagler et al. v. Larner et al. (Ill.), 120 N. E. R. 575)

The Supreme Court of Illinois affirms a decree that dismissed as without equity a bill of complaint whereby it was sought to enjoin the defendants from preventing the complainants from attending the public schools of Granite City unless they were first vaccinated, according to a resolution adopted by the local board of health that all children should be excluded from the public schools for a period of two weeks unless recently vaccinated, or unless they produced a certificate that they had been successfully vaccinated within the past five years or had had smallpox. The court says that the exact question raised in this case seems never to have been passed on directly by this court, as it appeared from the stipulations that smallpox was epidemic and prevalent in Granite City, and that there actually existed a large number of cases of smallpox when the resolution was passed and enforced, and that the board, acting under the authority conferred by a city ordinance, passed the resolution for the purpose of preventing the spread of the disease and of preserving the health of the citizens. The rule is firmly established in Illinois that school directors and boards of education have no authority to exclude children from the public school on the ground, simply, that they refuse to be vaccinated, unless in cases of emergency, in the exercise of the police power, it is necessary or reasonably appears to be necessary to prevent the contagion of smallpox. But it appeared in the cases wherein that rule was established that there was no epidemic or prevalence of smallpox and that the pupils were in a healthy condition and had not been exposed to smallpox, and this court held it to be unreasonable to require vaccination as a prerequisite to admission to the public schools in such cases, and that there was no law of the state of Illinois authorizing such action.

The resolution of the board of health in this case was reasonable in view of the fact that smallpox was epidemic and the disease likely to spread from the many cases then existing in the city. The state statute empowered the city council "to appoint a board of health and prescribe its powers and duties," and also "to do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease." The city ordinance referred to conferred on the board of health power to make such rules and regulations and such sanitary investigations as the board might from time to time deem necessary for the preserving and improvement of the public health on the appearance in epidemic form of smallpox, etc. These provisions of the state and the ordinance conferred on the board of health ample authority to pass the resolution it did, under the existing facts.

As it was the duty of the board of health to enforce such reasonable rules and regulations as would stamp out the epidemic and promote the public health, and the resolution seemed well calculated to accomplish that purpose and as a public necessity existed for such action, the board must be held to have acted legally in passing the resolution, and the school board in enforcing it and requiring vaccination as a condition to pupils entering the schools. The exercise of such authority by the board of health and the school board finds ample authority in the police power of the state when such a necessity arises as was shown in this case, and no constitutional rights of the complainants were violated. No child has a constitutional right to carry to others in school the loathsome disease of smallpox.

While it is true that occasionally very disastrous results happen from the use of impure vaccine, and there are many people, for that or other reasons, who resist, and have the right to resist, compulsory vaccination of their children except in cases of necessity; yet they have no right to insist on their children continuing in school and mixing in large congregations without obeying such requirements when smallpox is epidemic in the community and such children perhaps have

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basis this by the defendant that "the liability imposed contained in the policy of indemnity, referred to mon-law liability only, and it was argued that a surgeon, under the law, is not required to enter into a contract, but is liable only for failure to exercise diligence, care, and skill such as is ordinarily possessed by the members of his profession in good standing, and that when he made a contract to do more than that he took on himself a liability not imposed by law. This reasoning would no doubt be sound in case of malpractice on the part of a physician, but clearly the physician had a right to enter into a contract to remove all gallstones from the body of his patient and to effect a cure. He clearly had a right to do this in the practice of his profession; and if he made an error or mistake, or was guilty of malpractice, and damages resulted thereby to his patient, a recovery might be had. The words "malpractice," "error," and "mistake," as used in this indemnity policy, did not mean necessarily the same thing. The words "liability imposed by law" clearly referred to a judgment recovered on account of malpractice, error, or mistake, and did not limit the policy to cases in which there was simply malpractice, in which the physician was required to use care, diligence, and such skill as is ordinarily possessed by the average members of the profession in good standing. The judgment in the Schuster

More important, however, time has been allowed for ascertaining the true valuation of several obstetric problems and methods that had not been thoroughly tried out up to that time. He mentions specifically the pregnancy reaction of Abderhalden, the relation of the endocrine glands to gestation, twilight sleep, and the urinary tests for the toxemias of gestation. Amplifications have been made in such obstetric problems and methods as anesthesia, analgesia, cesarean section and the treatment of contracted pelvis. In the treatment of eclampsia, more prominence is given to conservative methods, and as a result of the advance in the use of the rectal method of examination during labor, the section on the conduct of labor has been revised with this point in view. This textbook continues to be one of the most complete and best illustrated one volume work on practical obstetrics in English.

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[illegible] us, May 6-8.
[illegible] Society, Muskogee, May 20-22.
Rhode Island Medical Society, Providence, June 5.
Texas State Medical Association, Waco, May 13-15.
Western Roentgen Society, Cleveland, June 5-6.

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-Sixth Annual Meeting, held at Nashville, April 8-10, 1919

The President, DR. RICHMOND MCKINNEY, Memphis, in the Chair

The Puzzle of the Gastric Ulcer

DR. W. N. LYNN, Knoxville: The so-called classical symptoms of gastric ulcer—pain, hemorrhage and vomiting—may be presented in appendicitis or in a case of simple intestinal kink. Suppose at operation a simple ulcer is excised, and the pathologist finds groups of cells resembling carcinoma, surrounded by connective tissue, at the margin of the ulcer. If this ulcer history goes back four or six or eight or nine years, what evidence have we that the ulcer was not malignant from the first? Until we know more concerning the life history of gastric cancer, are we in position to deny that gastric cancer may exist for years? We know but little about the clinical history of carcinoma, and when we say a patient has an ulcer history of six or seven years, how can plish this it is necessary to keep the incapacitated workman and his family from dependency until he is restored to efficiency. The objections to health insurance are thus summarized: 1. The cost is prohibitive. 2. The proposed plan fails to protect the unemployed and the casually employed. 3. The aim of legislation should be the prevention of sickness and not compensation for losses. 4. Industry and society are not liable for sickness. 5. Compulsory state health insurance is paternalistic and interferes with personal liberty. 6. Living wages will enable the worker to take care of himself.

Replying to the first, Lapp shows that health insurance, applied to 1,000,000 industrial workers in Ohio, will cost about $30,000,000 annually, and that existing sickness already costs the people more than twice that amount, a burden at present resting on the industrial worker and his family. The answer to the second objection is that social insurance does not apply to the unemployed or the pauper; that its function is to prevent people from becoming dependent, but that when they do it is the function of other agencies than social insurance to care for them. The unemployed have no wages to insure. If a man is not employed, he loses no wages when he is sick. Insurance cannot apply where there is no loss. To the objection that prevention rather than insurance should be undertaken, Lapp replies that they are not antagonistic but complementary and that neither can take the place of the other. To the objection that industry and society are not liable for sickness, he points out that all investigations have agreed that sickness results from three factors, the individual, the occupation and society at large, and that the burden must be distributed in proportion with the responsibility. The fifth objection, that of paternalism, Lapp says has been brought against every good measure that has been proposed in this country in the last fifty years. The sixth argument, that payment of a living wage will make state health insurance unnecessary by making it possible for each individual to carry his own burdens, Mr. Lapp denies, on the ground that it fails to take account of the risks of living which cannot be borne by the individual. "It is only by combining with others through forms of insurance that the gamble of life is eliminated. The most thrifty cannot make their life secure, because no one can tell what calamities of sickness and old age invalidity will be met. Thrift without insurance is often a delusion. There is no other way of assuring a living wage, covering present comforts and care in sickness and old age, except by insurance, and there is no way of providing adequate insurance at a reasonable cost except by making it universal through the state."

REPORT OF PENNSYLVANIA COMMISSION

lost no [illegible] Health Insurance Commission has made that his vision was [illegible] bill continuing the com- and several retinal hemorrhages were discovered [illegible] recognized the case as possibly one of nephritis, and referred the patient to me for a thorough examination. I found the highest diastolic pressure I have yet come across in any case; it was 170, and the systolic pressure was 240. Urinalysis detected no albumin. The phenolsulphonephthalein test yielded 13 per cent. in the first two hours. A specimen of urine was collected and found to contain a trace of albumin, with a few hyaline and granular casts. In all probability, this man is totally incapacitated. I believe that if this man had undergone periodic examinations, with blood pressure readings five years ago, a great deal of his present condition might have been averted.

DR. FRANK A. JONES, Memphis: In some cases, on account of the high systolic, diastolic and pulse pressure, we give a grave prognosis. In other instances, when the general condition seems very good, when the blood pressure is not so high, and the heart not much dilated, with no casts nor albumin in the urine, we render a favorable prognosis, and the patient suddenly drops dead, whereas the other patient, presenting grave conditions, lives for years. Textbooks have not paid sufficient attention to angina abdominalis. I believe we have as many cases of angina abdominalis as we have of angina pectoris. We find a number of cases of angina renalis and angina hepatalis. We likewise find, perhaps, a

Medicolegal

Conditions Warranting Requirement of Vaccination

(*Hagler et al. v. Larner et al. (Ill.), 120 N. E. R. 575*)

The Supreme Court of Illinois affirms a decree that dismissed as without equity a bill of complaint whereby it was sought to enjoin the defendants from preventing the complainants from attending the public schools of Granite City unless they were first vaccinated, according to a resolution adopted by the local board of health that all children should be excluded from the public schools for a period of two weeks unless recently vaccinated, or unless they produced a certificate that they had been successfully vaccinated within the past five years or had had smallpox. The court says that the exact question raised in this case seems never to have been passed on directly by this court, as it appeared from the stipulations that smallpox was epidemic and prevalent in Granite City, and that there actually existed a large number of cases of smallpox when the resolution was passed and enforced, and that the board, acting under the authority conferred by a city ordinance, passed the resolution for the purpose of preventing the spread of the disease and of preserving the health of the citizens. The rule is firmly established in Illinois that school directors and boards of education have no authority to exclude children from the public school on the ground, simply, that they refuse to be vaccinated, unless in cases of emergency, in the exercise of the police power, it is necessary or reasonably appears to be necessary to prevent the contagion of smallpox. But it appeared in the cases wherein that rule was established that there was no epidemic or prevalence of smallpox and that the pupils were in a healthy condition and had not been exposed to smallpox, and this court held it to be unreasonable to require vaccination as a prerequisite to admission to the public schools in such cases, and that there was no law of the state of Illinois authorizing such action.

The resolution of the board of health in this case was reasonable in view of the fact that smallpox was epidemic and the disease likely to spread from the many cases then existing in the city. The state statute empowered the city council "to appoint a board of health and prescribe its powers and duties," and also "to do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease." The city ordinance referred to conferred on the board of health power to make such rules and regulations and such sanitary investigations as the board might from time to time deem necessary for the preserving and improvement of the public health on the a[illegible] form of smallpox, etc. These pro- [illegible]iac. Paranoiacs ought [illegible] conferred on the board selves and so treated. I do not believe [illegible] it did, under of patients vocationally unless it is special tra[illegible] for safety.

DR. S. S. CROCKETT, Nashville: There are many mo[illegible] paranoiacs abroad than are found in institutions. Some are found in the medical profession, the legal profession, and in business pursuing vocations of great responsibility; but such men are known among their friends as cranks. They never settle disputes by arbitration. They fight them out. They think somebody is trying to "do" them. The paranoiac has two notable characteristics, egotism and suspicion. The egotism of the paranoiac leads him to undertake to reform the world. Paranoiacs may have delusions of persecution, of homicide or suicide; but when you put them on the witness stand before a jury they make fine witnesses, and no jury will send them to an institution unless they have committed violence.

Fracture of Pelvis: Report of Four Cases

DR. E. T. NEWELL, Chattanooga: Case 1 was a fracture of the tibia with fracture of the horizontal ramus of the pubis and ascending ramus of the ischium, complicated by injury to the external iliac artery of the same side, foll[illegible]

[illegible]ne and amputation of the leg. Case 2 [illegible]

[illegible]orizontal ramus, os pubis, and [illegible] the ischium of the right side, with rupture of the bladder, peritonitis and obstruction of the bowel. Case 3 was a fracture of the descending ramus of the os pubis, with rupture of the membranous urethra, followed by stricture. Case 4 was a simple, uncomplicated fracture of the horizontal ramus, os pubis and ascending ramus of the ischium. There were no complications. All four patients recovered. All have good functional results with the exception of the man who had to have the leg amputated, and he has no pain nor discomfort at the site of the pelvic fracture. There was no special treatment of these pelvic fractures aside from the immobilization of the patient on the back on the Allen stretcher. I believe that the less we manipulate the bone, and the more quiet we keep the patient, the fewer complications we have and the better will be our result.

Achylia Gastrica

Dr. Otis S. Warr, Memphis: Achylia gastrica is merely a symptom. Cases occurring in individuals past middle life should be regarded with suspicion and repeated search be made for some organic cause lest a beginning malignancy be overlooked. No case should be regarded as a true achylia gastrica based on the result of an Ewald test meal. If this test reveals an achylia, a fractional analysis should be done and carried over a period of at least two hours. If, in the course of a routine examination, achylia is discovered in an individual who is suffering no particular digestive disturbance, one should be careful not to attach too much importance to this finding, lest the patient imagine he has some serious disease and thus become a confirmed neurasthenic. In the management of achylia, one should have no routine plan but should individualize in every case.

DISCUSSION

Dr. William Krauss, Memphis: It is high time that the general practitioner begin to recognize the value of fractional analyses of stomach contents. I am sure that every one who has adopted this method will consider that the information he has obtained from the use of the old large tube with single aspiration is valueless in determining the possibilities of acid secretion. By the fractional methods we are able to determine not only the highest point of acidity but also the period at which the highest point of acidity occurs, which is of considerable value.

Dr. Frank A. Jones, Memphis: I have seen a number of cases of achylia gastrica that did not develop cancer of the stomach. Achylia gastrica is more frequent in myasthenic, psychasthenic, high-strung, nervous women than in any other class of patients. Achylia gastrica bears about the same relation to these psychasthenic conditions as do the hysterical paralyses, hysterical paraplegias and hysterical phobias. The sovereign remedy in cases of achylia gastrica is hot water before meals, in large drafts; hot baths, morning and night, soaking the patients in the hot water bath for half an hour; and the drinking of a gallon of hot water every day. Heat tones blood pressure. I have seen the blood pressure not more than 80 in these cases; in one case it was 72.

Dr. Jack Witherspoon, Nashville: One interesting point about achylia gastrica is the fact that these patients have no pylorospasm. They have no contractions at the external end of the stomach, and foodstuff passes through very rapidly. This probably accounts for the large number of cases of intestinal fermentation and resultant intestinal diarrheas we see in this disease.

Some Practical Procedures Used by the Army That Are Applicable to Civil Work

Dr. Lucius E. Burch, Nashville: Shock is a condition frequently found both in civil and in military practice. Many of the soldiers brought in from the battlefield were in profound shock. A special shock ward was set aside in the evacuation hospitals for the treatment of these cases. It is necessary to keep a shock patient warm, and restore the loss in body heat. This was done by a simple appliance. Wooden boxes, the length of a litter and about 2 feet high, were made without floor or roof. An opening was made in one end of the box sufficiently large to carry a pipe leading from an oil stove which was placed at one end. The litter containing the patient is placed on the box, the stove lighted, and the patient covered with blankets. The heat is conducted from the stove through the pipe to the space beneath the patient, and serves the desired purpose.

In no field of surgery have greater advances been made than in fractures. The American surgeon has been so accustomed to use plaster of Paris that he was slow in adopting the metal splints of the English. Many of these splints are old friends that had been relegated to the junk pile and were brought out during the war. The old Thomas hip splint is an admirable apparatus. It continually maintains traction; abduction is easily carried out, and transportation is made comfortable. It may also be used advantageously in fractures of the leg. In this class of fractures it is rarely necessary to do an open operation, if this splint is used in connection with the Sinclair skid. It also has the advantage that patients may be moved to the roentgen-ray room for observation. An additional advantage is that when the bone is sufficiently united, it may be used as an ambulatory splint.

An operation that impressed me more than any other was for arteriovenous aneurysm. It is a method brought out by Major Connors, chief of the surgical service, Base Hospital No. 8, Saveney, France. The technic is quite simple. The vein is ligated both on the distal and the proximal side of the aneurysm. That part of the vein which is affected by the aneurysm is then bisected between the two ligatures and stitched over the opening in the artery by interrupted sutures.

DISCUSSION

Dr. Battle Malone, Memphis: With reference to shock, it was astonishing to me to see with what rapidity our wounded soldiers in Europe reacted from shock by carrying out the method mentioned by Dr. Burch. As to the treatment of joint injuries, septic joints were laid wide open, and motion was begun early, except in cases of fracture or a complicating embolism; then motion could not be kept up. In joint injuries the wounds were closed unless it was known that the joints were infected at the time the wounded soldiers came in.

Blastomycosis

Dr. J. M. King, Nashville: The treatment I use in these cases consists of thorough curetting, the application of very hot sponges, followed with local application of pure phenol, followed by alcohol, wet mercuric chlorid dressings under oiled silk, roentgen ray and iodids, with complete recovery.

Intestinal Obstruction

Dr. Robert Caldwell, Nashville: If we are to lower the mortality of intestinal obstruction, early diagnosis and prompt surgical relief are absolutely essential. Operative measures used in the relief of this condition are mainly two, first, relief of the obstruction and second, empting of the toxic material that has been produced. An enterostomy should be done only in cases in which obstruction cannot be dealt with, or when there is a loop of obstruction; then an enterostomy should be done above the proximal point of obstruction.

Early Spanish-American Medicine.—In the University of Guatemala, there are still in use for medical teaching three rather curious wax models made in the eighteenth century by Dr. José Flores, a former professor of medicine in that college. One of them is used to explain osteology and represents the human skeleton, showing the bones on one side and on the other the nerves and veins. The second model is for the classes in myology and represents a man with the muscles falling loose from the bones. The third figure is employed for lessons in neurology, and is a human figure whose head and abdomen can be opened to show the inside structure. Flores was the author of a pamphlet published in Mexico in 1782 on "a specific recently discovered in Guatemala for the radical treatment of chancres." A note on the title page of the book states that the treatment consisted in eating some lizards that grow in Guatemala.—From Beristain's Biblioteca Hispano Americana.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, New York

April, 1919, **79**, No. 496

Needless Operations. J. O. Polak, Brooklyn, N. Y.—p. 465.
Watery Accumulations in Fetal Abdomen Obstructing Labor; Report of Case. W. A. N. Dorland, Chicago.—p. 474.
Polypoid Adenoma of Uterus. L. W. Strong, New York City.—p. 502.
Cysts of Corpus Luteum. E. Schwarz, New York City.—p. 516.
Use of Bismuth Paste in Treatment of Cervicitis and Endometritis. A. R. Hollender, and W. M. Gratiot, Mineral Point, Wis.—p. 523.
Adenomyoma of Rectovaginal Space. A. Heineberg, Philadelphia. —p. 526.
*Status of Uterine Curettage Based on Hospital Records. R. M. Rawls, New York City.—p. 534.
"Follow-Up" System in the Woman's Hospital. B. H. Goff, New York City.—p. 544.
*Induction of Labor by Use of Bougies. C. Foulkrod, Philadelphia. —p. 550.

Status of Uterine Curettage.—The statistics given by Rawls are not favorable to the performance of this procedure either as a diagnostic or a therapeutic measure.

Induction of Labor by Use of Bougies.—Foulkrod uses two silk bougies, with or without iodoform gauze packing, to induce labor. These bougies must be well placed, that is, the patient must be in a good position on the edge of the table or bed and must be very well self controlled or must be controlled with anesthesia so that the operator can introduce two fingers into the cervix anterior to the child's head and can see that the bougies go directly up to the cavity without bending. When two bougies are so placed, gauze is packed into the cervix and into the vagina. The patient is returned to bed and the onset of labor pains awaited. Foulkrod prefers to wait even two days before changing the bougies.

American Journal of Roentgenology, New York

February, 1919, **6**, No. 2

Streptococcus Empyema: As Revealed by Roentgen Ray. W. H. Stewart.—p. 57.
Some Non-Tubercular Pulmonary Conditions. A. L. Gray, Richmond, Va.—p. 66.
Empyema Pathology in Relation to Roentgen Ray Examinations. R. A. Keilty, Philadelphia.—p. 70.
Roentgenology as Method of Studying Natural History of Diseases. L. G. Cole.—p. 72.
Roentgen Rays in Diagnosis of Appendicitis. G. E. Pfahler, Philadelphia.—p. 78.
Roentgenologic Findings in Case of Subphrenic Pyopneumothorax of Right Side. S. Moore, St. Louis.—p. 83.
Complications in Pneumonia. F. E. Diemer, Camp Lewis, Wash. —p. 86.
Roentgen Ray Problems in Overseas Navy Base Hospital. R. Hammond, Providence, R. I.—p. 92.
Cooperation of Roentgenologists and Other Medical Officers. M. B. Palmer, Rochester, N. Y.—p. 94.

Archives of Diagnosis, New York City

January, 1919, **11**, No. 3

Diagnostic Value of Study of Pathologic Changes in Vivo. C. Beck, Chicago.—p. 173.
Course and Prognosis of Exophthalmic Goiter. I. Bram, Philadelphia. —p. 177.
Method of Fluoroscopic Examination with Army Bedside Unit. F. F. Borzell, Philadelphia.—p. 196.
War Nephritis. H. B. Day, R.A.M.C.—p. 198.

Archives of Internal Medicine, Chicago

April 15, 1919, **23**, No. 4

*Extrameningeal Meningococcus Infections. W. W. Herrick, New York.—p. 409.
*Studies on Effects of Louse Bites—Pediculus Corporis. A. D. Hirschfelder and W. Moore, Minneapolis.—p. 419.
*Arborization Block. F. A. Willius, Rochester, Minn.—p. 431.
*Basal Metabolism in Anemia with Especial Reference to Effect of Blood Transfusion on Metabolism in Pernicious Anemia. E. H. Tompkins, H. H. Brittingham, and C. K. Drinkwater, Boston.—p. 441.
*Studies on Alimentary Hyperglycemia and Glycosuria. C. V. Bailey, New York City.—p. 455.
*Diastatic Activity of Blood in Cancer, Syphilis and Diabetes. H. H. DeNiord, and B. F. Schreiner, Buffalo.—p. 484.
Fatigue Disease as Exemplified in Functional Disorders of Stomach and Thyroid. J. Rogers, New York City.—p. 498.
*Plasma Chlorids in Anemia. E. Steinfield, Philadelphia.—p. 511.
*Clinical Significance of Slight Notching of R-Wave of Electrocardiogram. A. M. Wedd, Pittsburgh.—p. 515.
Fatigue in Irritable Heart and Other Conditions. J. T. King, Lakewood, N. J.—p. 527.

Extrameningeal Meningococcus Infections.—Three hundred and fifteen cases of meningococcus infection were studied by Herrick at Camp Jackson. In approximately 40 per cent. the diagnosis was made before meningitis devoloped. In 5 per cent. meningitis never developed at all. With few exceptions the earliest evidences of meningitis were preceded by symptoms of a general infection lasting from a few hours to several days, in exceptional instances, weeks. This initial stage of sepsis was repeatedly proved by blood culture, by clinical studies and necropsies. Herrick regards epidemic cerebrospinal meningitis as being a blood stream invasion, a sepsis, at first, for a period averaging forty-eight hours, often more, at time less. Later there is the local process, usually in the meninges, not infrequently elsewhere. To emphasize the extrameningeal rôle of the meningococcus, Herrick reports six cases in which meningitis was absent or a subordinate part of the disease process. These cases were: (1) Meningococcus sepsis without meningitis either clinically or at necropsy. (2) Meningococcus sepsis without clinical meningitis: at necropsy, meningeal congestion and arachnoid cell hyperplasia—the earliest stages of meningitis. (3) Meningococcus sepsis without meningitis; septic polyarthritis; recovery with intravenous treatment. (4) Meningitis tarda, or meningitis with premeningitic stage of meningococcemia of several weeks' duration. (5) Meningococcus pleurisy. (6) Meningococcus empyema of accessory nasal sinuses, both without meningitis. Herrick recommends that the term epidemic cerebrospinal meningitis should be abandoned, and that the term meningococcus infection should be used to denote such general processes as meningococcus sepsis. Meningococcus meningitis should be the term used in the case of meningococcus infection with predominant cerebrospinal symptoms.

Effects of Louse Bites.—Previously reported observations by Moore indicated that a macular erythematous skin eruption, somewhat resembling that of measles or German measles, distributed over the chest, back and abdomen, may occur in a normal person who allows lice to feed on the skin of his forearm only. This eruption was accompanied by general lassitude and malaise, headaches, and peculiar pains in the calves of the legs and soles of the feet, particularly under the toes. The present series of observations made by Hirschfelder and Moore was undertaken to determine whether the previously recorded observations represented a peculiarity of the individual on whom the lice had fed, or whether it might be regarded as a general phenomenon. Four perfectly healthy young men volunteered for the experiments. They were normal, except in some cases for the enlargement of a lymph gland here and there. Each of the subjects allowed himself to be bitten twice daily by the number of lice specified. These lice were raised from eggs and had never fed on any except healthy individuals. In every individual bitten, except one, there was a prompt rise of temperature, ranging from 99.3 to 99 F., after the lice had been fed. Sometimes, this occurred with surprising rapidity and the temperature reached 99.9 F. within an hour after feeding. In three out of four of the subjects a well defined rash composed of semilunar and crescentic macules from 2 to 3 mm. in size resembling those of a fading measles or German measles occurred. The rash was not very striking and yet was definite enough to be seen without difficulty when it was at its height. The macules disappeared on pressure. It was distributed over the chest, back and upper abdomen, and in no case appeared on the face, neck, arms or lower limbs. It was always most distinct and persisted longest in the regions between the nipples and the lower costal margins.

The authors conclude that their observations point strongly toward the presence of a substance in the louse sufficiently

Late Results in Stomach Surgery.—In this paper Schwyzer emphasizes the fact that the surgical results in stomach cases are not short-lived. Leaving aside all the cases which were observed for less than a year after the operation, Schwyzer has, including carcinomas, recent reports from 91 patients. Of these are well, 62; geatly impoved, 12; improved, 15; temporarily improved, 2. Of those observed for two years or longer, reports were received from 72. Of these are well, 49; greatly improved, 12; improved, 11. Of 47 patients observed 5 years or over, 31 are well today; 9 greatly improved; 7 improved. Ten patients were observed for more than twelve years. Of these, 8 are well today; 1 greatly improved; 1 improved. Schwyzer had 15 acute perforations of ulcers with 4 deaths, 27 per cent. Carcinoma of the stomach, 26 cases with 1 death. Ulcers, including strictures of pylorus, 76 cases with 1 death. Acute perforations of ulcers, 15 cases with 4 deaths. Ptosis and dilatation without definite stricture, 13 cases with no deaths. Unclassified cases, mostly indistinct indications, 9 cases with 2 deaths. Total: 139 cases with 8 deaths. Grouped according to the operative procedures, he had among the other cases, including the carcinomas: Eighty-six gastroenterostomies, with 2 deaths, 2⅓ per cent. Thirteen pyloroplasties (Finney), with 1 death, 8 per cent. Thirteen gastroplications (partly with other op.), with no deaths, 0 per cent. Twenty resections, with 1 death, 5 per cent. This investigation would indicate that the patient who is completely relieved of his symptoms for a year after the operation most always stays cured.

Derangements of Semilunar Cartilages.—This article was abstracted in The Journal, Sept. 21, 1918, p. 1001.

Missouri Medical Association Journal, St. Louis

April, 1919, **16**, No. 4

*Spinal Cord Surgery. E. Sachs, St. Louis.—p. 109.
Nasal Sinus Disease and Asthma. A. J. Lorie, Kansas City.—p. 113.
Psychoses Complicating Influenza. F. M. Barnes, St. Louis.—p. 115.
One Hundred Years of Medicine in Missouri. H. W. Loeb, St. Louis.—p. 117.
Dual Perforations of Stomach from Gastric Ulcer. E. H. Kessler, St. Louis.—p. 124.

Spinal Cord Surgery.—Of forty-five cases treated by Sachs, twenty-seven were cases of spinal tumors or those diagnosed as such, a much larger percentage than is ordinarily believed to occur. Sachs emphasizes that the earliest symptom of a focal lesion is usually paresthesia and not pain, in fact, pain is not a necessary symptom for the diagnosis of a spinal lesion. [illegible] Lead twenty-seven cases in which operation was performed for tumor, a tumor was found and removed in thirteen. In six there was a serous pachymeningitis or local collection of fluid, practically a cyst, while in six the findings were negative, but three of these six operations were performed on one patient. So that there was a mistake in diagnosis in four cases. There were two deaths in this group, a mortality of 9.5 per cent. Sachs feels very strongly that every patient with symptoms of a focal spinal lesion has not had a fair chance until they have been explored. He advocates laminectomy because when carefully carried out it is attended by little danger.

New Jersey Medical Society Journal, Orange

April, 1919, **16**, No. 4

Present Status of Cancer Problem. L. D. Bulkley, New York City.—p. 111.
Control of Venereal Diseases. L. L. Davidson, Newark, N. J.—p. 114.
Original Device for Control of Hemorrhage from Large Sinuses of Brain by Invulsion of Outer-Wall into Lumen. W. P. Eagleton, Newark.—p. 116.
Public Health and Child Hygiene. E. S. Hamblen, Washington, D. C.—p. 118.

New York Medical Journal, New York

April 12, 1919, **109**, No. 15

What General Practitioner Should Know About Chronic Gonorrhea. A. L. Wolbarst, New York City.—p. 617,
Cases of Homonymous Hemianopsia and Central Scotoma. I. S. Wechsler, New York.—p. 624.
Birth Injuries. J. C. Applegate, Philadelphia.—p. 626.
Artificial Pneumothorax in Pulmonary Tuberculosis. L. S. Peters, Albuquerque, N. M.—p. 629. (To be continued.)

Circulatory Complications in Influenza. Z. I. Sabshin, U. S. P. H. S.—p. 635.
*Joint Hypotonia. S. A. Jahss, New York City.—p. 638.
Military Surgery at Belgian Front. V. A. Robertson, Brooklyn.—p. 639.

Joint Hypotonia.—The case cited by Jahss is said to be the second on record. The child was 17 months old. The shoulder joints were normal; adduction and abduction of the elbows, with forearm extended on the arm, was possible with a range of motion of about 5 degrees either way. Flexion and extension appeared normal. The dorsum of the hand could be approximated to the dorsum of the forearm and the palm of the hand could be placed on the anterior surface of the forearm. Pronation and supination of the wrist proper was possible in an arc of about 120 degrees. In the fingers this unusual degree of flexion and extension was present. Examination of the lips showed a double congenital dislocation which was confirmed by the roentgen ray; flexion of the knees was normal. Hyperextension was very mild. Internal and external rotation were possible to an extent of 90 degrees; on dorsiflexion the entire foot, including the toes, could be placed on the crest of the tibia. In plantar flexion the planes of the foot and leg were in one straight line. Eversion and inversion were markedly increased. The same degree of mobility was present in the metatarsophalangeal joints. Rotation of the head on the neck showed that the point of the chin reached a point about 30 degrees posterior to the shoulder. All normal reflexes were present. There was neither a quantitative nor a qualitative reaction of degeneration when the faradic and galvanic currents were applied. No pathologic reflexes were elicitated. This case agrees in practically all particulars with the one reported by Finkelstein. It is both congenital and familial; the muscle power seemed normal; the reflexes were present; there was no reaction of degeneration; involvement of the bone was not found present, and practically every joint of the body was involved.

Ohio State Medical Journal, Columbus

April 1, 1919, **15**, No. 4

Appendix and its Diseases. K. Hale, Wilmington.—p. 213.
Chronic Endocervicitis Vs. Endometritis. F. I. Shroyer, Dayton.—p. 219.
Infected Tonsils and their Sequels. L. E. Brown, Akron.—p. 220.
Biliousness. M. Millikin, Hamilton, Ohio.—p. 222.

Pennsylvania Medical Journal, Athens

April, 1919, **22**, No. 7

Roentgenographic Diagnosis of Ileocecal Valve Incompetency. M. K. Fisher, Philadelphia.—p. 412.
Pneumonia. W. J. K. Kline, Greensburg.—p. 417.
Case of Pellagra. L. L. Schwartz, Pittsburgh.—p. 422.
Practical Deductions from Successes and Failures in Treatment of Ear, Nose and Throat Diseases. J. L. Davis, Philadelphia.—p. 424.
Ocular Evidences of Pathology of Ethmoidal Labyrinth. H. H. Turner, Pittsburgh.—p. 427.
Diagnosis of Disease of Accessory Sinuses. J. S. DeMuth, Pittsburgh.—p. 430.
*Reaction After Bronchoscopy. C. Jackson, Philadelphia.—p. 434.
Esophageal Stenosis: Report of Cases. E. J. Patterson, Pittsburgh.—p. 436.
Operative Technic of Incomplete Cataract. J. W. Crosky, Philadelphia.—p. 439.
Variations in Clinical Picture of Interstitial Keratitis. A. Bray, Philadelphia.—p. 441.
Leading up to Modern Operative Bone Surgery. G. Chaffee, Binghamton, N. Y.—p. 445.

Reaction After Bronchoscopy.—Jackson claims that a carefully, properly and skilfully done bronchoscopy is associated with little or no reaction in recent cases of foreign body in the bronchi, if no previous bronchoscopy was done recently. Anything similar to surgical shock is due to undue prolongation of the procedure or to faulty technic.

Southwestern Medicine, El Paso, Texas

March, 1919, **2**, No. 15

Perthes' Disease. W. W. Watkins, Phoenix, Ariz.—p. 1.
New and Successful Treatment for Bacillary Dysentery. H. Yandell, Sacaton, Ariz.—p. 4.
Early Diagnosis of Renal Tuberculosis. B. W. Wright.—p. 6.
Branchial Fistulas; Report of Case. J. Vance, El Paso, Texas.—p. 10.

Tennessee State Medical Association Journal, Nashville

April, 1919, **11**, No. 11

Vocational Training for Inmates of Institutions for Mental and Nervous Diseases. R. E. L. Smith, Knoxville.—p. 403.
The Alienist. L. D. Smith, Knoxville.—p. 405.
Lessons from Study of One Thousand Diphtheria Deaths. B. W. Carey, Boston.—p. 409.

United States Naval Medical Bulletin

Supplement Published for Hospital Corps of Navy

January, 1919, No. 8

Care of Contagious Diseases. W. C. Newton, M. C., U. S. N.—p. 7.
Prevention of Cross Infections in Hospital Ward or Sick Bay. C. Fox, U. S. P. H. S.—p. 10.
Arrest of Pain or Disease Due to Teeth. J. M. Walls, Minneapolis.—p. 11.
Laboratory Procedure All Hospital Corpsmen Should Know. R. E. Weaver, M. C., U. S. N.—p. 19.
Campaign Against Mosquitoes. C. Fox, U. S. P. H. S.—p. 26.
Boils. G. F. Cottle, M. C., U. S. N.—p. 28.
Things As They Are. C. W. Cuno, Yankton, S. D.—p. 33.
Troop Transportation. R. M. Dumphy, U. S. N.—p. 39.
First Aid.—p. 43.
German "Chemical" Frightfulness. P. F. Dickens, M. C., U. S. N.—p. 44.
Study of Pharmacy and Chemistry in Navy. L. C. Sims, M. C., U. S. N.—p. 47.
Naval Overseas Transportation Service.—p. 56.
Naval Overseas Transportation Service Instructions. R. A. Bachmann, U. S. N.—p. 59.

War Medicine, Paris

January, 1919, **11**, No. 6

Tuberculosis of Lungs. Major Rist and others.—p. 971.
Wound Bacteriology at Evacuation Hospital No. 1, A. E. F., France. T. C. Beebe.—p. 1023.
Paris Hospitals. T. D. Boulanger.—p. 1037.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 22, 1919, **2**, No. 3038

*Etiology of Influenza. H. G. Gibson, F. B. Bowman, and J. I. Connor.—p. 331.
*Symptoms of Hyperthyroidism Observed in Exhausted Soldiers. W. Johnson.—p. 335.
Hemorrhagic Spinal Effusions. W. P. S. Branson.—p. 337.
*Bacteriologic Findings in Epidemic Influenza. W. R. Munro.—p. 338.
*Typhoid Carrier for Thirty-Seven Years. S. T. Champtaloup.—p. 338.
Half a Century of Smallpox and Vaccination. J. C. McVail.—p. 339.

Etiology of Influenza.—This is a preliminary report of the experimental work done by Gibson, Bowman and Connor with a filtrable organism. They succeeded in growing a minute micro-organism of a coccoid shape by Noguchi's cultural methods from: (*a*) the kidney of infected animals; (*b*) the filtrates of lung tissue, and (*c*) the filtered sputum from cases of influenza. The cultures have been carried to the third generation by direct culture. The cultures when inoculated into animals produced typical "experimental influenzal" lesions, and cultures were recovered again from the animals so inoculated. The pathologic lesions in what may be called experimental influenza in animals closely resemble those seen in the lungs of men. Some evidence was obtained in favor of the view that the passage of the virus from one animal to another may raise its virulence. Inoculation of the filtered and unfiltered sputum taken from cases of influenza, especially at an early stage of the disease, has been found to produce lesions in the lungs in a high proportion of inoculated animals.

Hyperthyroidism in Exhausted Soldiers. — Temporary exophthalmos was noted by Johnson in the early stage of advanced conditions of exhaustion. When it disappeared the patient at once merged into the group of cases labeled "neurasthenia," and was indistinguishable from them. Johnson suggests that a large number of so-called psychoneuroses are cases in which the symptoms are due to a state of disordered internal secretion, the result largely of emotional exhaustion, and, to a less degree, of physical exhaustion. Many cases, later diagnosed as irritable heart, D. A. H., soldier's heart, and neurasthenia, are really cases of this class, and possibly many have passed through a slight state of exophthalmos without its importance being realized. Johnson further suggests the advisability of classing the whole group under a suitable term. "Exhaustion syndrome."

Bacteriologic Findings in Influenza.—Over 150 influenza sputums were examined by Munro by film and by culture. In about half the number, short gram-negative bacilli were found on the slide. In some specimens these occurred in enormous numbers, but there was never wanting plenty of gram-positive diplococci and streptococci. Gram-negative diplococci were also seen, and none of these proved to be a meningococcus. They were probably *M. catarrhalis* or members of that group. Staphylococci were seen fairly commonly. It is suggested that the influenza bacillus was probably present in all cases at the begininng of the illness, and that the pneumococcus and the streptococcus were mainly responsible for the pulmonary complications.

Typhoid Carrier for Thirty-Seven Years.—Champtaloup cites the case of a man, aged 72, who had worked at sheep-shearing, bush-falling, and as a general farm servant in and about the same district in New Zealand for nearly forty years. He had never been engaged in cooking or otherwise handling food at the farms or stations at which he worked. He had had typhoid fever in 1881. He suffered a relapse, and was in the hospital thirty-seven weeks. On five different occasions (from 1888 until 1918) men working with him became ill with typhoid. On examination it was found that his serum agglutinated his own bacillus up to 1:300, and agglutinated the standard (Oxford) strain of *B. typhosus* up to 1:250. Very numerous typhoid colonies on MacConkey plates, and in almost pure culture, were found in his feces on several occasions.

Lancet, London

March 20, 1918, **2**, No. 4987

New Prospects in Field of Therapeutic Immunisations. A. E. Wright.—p. 489.
*Influenza Pneumonia. W. Osler.—p. 501.
Wassermann Test: Its Reliability. C. F. White and A. T. McQhirter.—p. 502.
Colloid Antimony Sulphid Intravenously Injected in Kala-Azar, with Note on Antimony Oxid Orally. L. Rogers.—p. 505.
Recent Retrogressions in Treatment of Fractures. M. Sinclair.—p. 507.
*Treatment of Gonorrhea by Pus Vaccines. E. G. D. Pineo and D. M. Baillie.—p. 508.
Fitness and Unfitness in Convalescence. B. Parsons-Smith.—p. 509.

Influenza Pneumonia with Hemorrhagic Spinal Meningitis.—Osler cites a case of influenza pneumonia with bilateral rigidity, spinal meningitis with hemorrhage into the vecca vertebralis and nerve roots. The neck was so rigid that the patient could not lift the head from the pillow: The spine was arched, the muscles strongly contracted. Both upper limbs were in toxic spasm, the arms more than the forearms; he could extend and flex the fingers; he could not move the arms from the side; at intervals there was slight tremor. Both legs were rigid; the muscles stood out prominently, and the foot was extended; slight ankle clonus, knee-jerks not obtainable, nor the Babinski sign. On the skin of feet and ankles was a crop of fresh purpura. The breathing was largely abdominal, movements of the chest were very slight, but more on the right than on the left side. Dulness shaded to flatness from the fourth left rib upward, extending into the axilla and as high as the angle of the scapula behind; intense tubular breathing with fine crepitant râles was present. The heart sounds were clear. He had, in addition, well-marked purpura. Lumbar puncture was negative. Blood cultures were negative. Necropsy: Into the spinal theca and extending along the nerve-roots into the foramina was a uniform sheeting of hemorrhage obliterating the spinal veins, dense enough to cover completely the nerve-roots and involving their sheaths; it was more marked in the posterolateral than in the anterior portions. There was no free blood in the spinal canal; the hemorrhage was entirely into the theca.

Gonorrhea Treated by Pus Vaccine.—The gonorrheal pus vaccine first suggested by Lickley was used with good results by Pineo and Baillie. For chronic cases this vaccine was combined with emulsion of ten strains of gram-positive diphtheroid bacilli and of seven strains of *S. albus* isolated from chronic cases. The minimum doses of these bacteria were 60 million and 240 million, respectively. The type of cases most benefited by vaccines were: (*a*) chronic gleet, stage coming on about twenty to twenty-five days after commencement of discharge, with gonococci, intracellular and extracellular, in the discharge; (*b*) relapses generally stirred into activity by recent and repeated sexual connections, with drinking bouts; (*c*) cases of gonorrheal rheumatism in acute or chronic stage; (*d*) gonorrheal ophthalmia, either metastatic or local infection type; (*e*) the rare cases of gonorrheal septicemia. The scheme of dosage most satisfactory was 6 million, 12 million, 18 million, 24 million, 36 million, 60 million, 72 million, 90 million, 120 million and 150 million doses given at three days' intervals. If a rise of temperature occurred after any dose, that dose was repeated on the next occasion, and, in one or two cases, one dose lower in the scale. Most patients were cured by the time they reached the 60 to 72 million doses. The most obstinate were cases of relapse after a long interval from their previous treatment. The majority of those were admitted with chronic gleet, with a few fine shreds in their urine. They show, according to the authors' figures, a high resistance to any vaccine. They are unable to show control cases of other vaccines, but in their hands this vaccine has given incomparably better results than any previously used by them.

Seale Hayne Neurological Studies

November, 1918, **1**, No. 3

*Hysterical Element in Organic Disease and Injury of Central Nervous System. A. F. Hurst and J. L. M. Symns.—p. 113.
*Hysterical Vomiting in Soldiers. W. R. Reynell.—p. 134.
*Hysterical Disorders of Micturition. J. W. Moore.—p. 141.
Hysterical Ocular Symptoms Complicating Conjunctivitis; With Special Reference to Gassing. A. F. Hurst and C. H. Ripman.—p. 145.
Hysterical Aphonia in Soldiers, with Special Reference to Gassing. A. W. Gill.—p. 150.
*Study of Epileptiform Convulsions in Soldiers. R. G. Gordon.—p. 159.
Hysterical Cases in Soldiers. G. McGregor.—p. 167.

Hysterical Element in Organic Disease and Injury of Central Nervous System.—Experience with soldiers has led Hurst and Symns to believe that the association of hysterical symptoms grafted on symptoms caused by organic disease is much more common than has generally been supposed. In fact, they claim that there are few symptoms caused by organic disease which are not liable to be aggravated and perpetuated by suggestion, so that it becomes necessary in almost every case of impaired function to look for a hysterical element which can be removed by psychotherapy. They have often found that hysteria may account for a large proportion of the incapacity in a patient presenting such definite signs of organic disease that it might very easily have been presumed that the entire condition was organic. Hence, every case in which it is at all conceivable that a hysterical element is present is tested by observing the effect of psychotherapy. The subject is discussed fully as to its clinical aspect, and many illustrative cases are cited.

Hysterical Vomiting in Soldiers.—Hysterical vomiting, according to Reynell, is comparatively common among soldiers. Besides being a most distressing condition in itself, it may lead to a severe degree of neurasthenia, with progressive emaciation and increasing mental distress, the loss of appetite with which it is associated finally leading in severe cases to a condition of anorexia nervosa. In many cases it is the only symptom, but the slighter forms of hysterical vomiting are common among patients suffering from all kinds of war neuroses. In a large number of cases, the hysterical nature of the disorder has not been recognized, and the patient has been treated as a sufferer from gastritis. Out of some 400 cases of war neuroses, eighteen patients suffered from hysterical vomiting of from four to twelve months' duration. All of these patients have been cured within three weeks of admission, most of them within ten days, and a few after a single treatment. The treatment used by Reynell for nearly all of these patients has consisted of psychotherapy, reinforced by the suggestive effect of the passage of a stomach-tube.

Hysterical Disorders of Micturition.—The case histories of two patients with hysterical incontinence of traumatic origin and two dating from infancy, together with one case of hysterical retention following injury, are cited by Moore. He believes that these cases were undoubtedly genuine, as shown by the great distress occasioned by the patients and their relief on being cured. Both patients were cured by psychotherapy.

Convulsions in Soldiers.—All cases of hysterical convulsions or fits, according to Gordon, are amenable to cure by psychotherapy. Two methods of treatment may be employed, hypnosis and autognosis. Gordon prefers the latter. By this is meant that the patient is afforded insight into his condition and made thoroughly to understand the pathogenesis of his fits. The patient is aware of what is going on all the time, and is invited and encouraged to cooperate in the treatment by the exercise of his reason and his will.

Tropical Medicine and Hygiene, London

March 15, 1919, **22**, No. 6

Dysentery in East Africa. J. C. Watt.—p. 45.
*Peculiar Group of Coccaceae. A. J. Chalmers and R. G. Archibald.—p. 48.

Peculiar Group of Coccaceae: Janus.—Peculiar diplococcal-like or streptococcal-like organisms which contain elements, some of which are frankly gram-negative while others are gram-positive, have been found from time to time by Chalmers and Archibald in the meninges and cerebrospinal fluid of cases of cerebrospinal meningitis, in the nasopharynx of cerebrospinal contacts, on the tonsils of a fair number of cases of severe tonsillitis, and in the blood of one case of septicemia. All these organisms belong to Zopf's family *Coccaceae*, as modified by Migula, and the authors call the group *Janus: Janus anginosus*, found in sore throats, and characterized by fermenting mannitol but not raffinose. *J. crassus*, found in cerebrospinal meningitis, is characterized by not fermenting mannitol and by producing acidity but no gas in raffinose. *J. septicemicus*, found in septicemia, is characterized by producing acidity but no gas in mannitol.

Archives Médicales Belges, Paris

December, 1918, **72**, No. 12

*Movable Bodies in Knee. C. Willems and J. de Caestecker.—p. 585.
*Blood in Serous Cavities. L. Delrez.—p. 602.
*Toxic Action of Blood Transfusion. N. Goormaghtigh.—p. 611.
*Sympathetic Ophthalmia. Van Schevensteen.—p. 621.

Walking at Once After Removal of Movable Bodies in the Knee.—Willems and de Caestecker now have a record of seventeen cases in which after extirpation of movable bodies in the knee they insisted on the immediate use of the knee. They emphasize the absolute absence of injury from early mobilization which was a constant feature of their cases of war wounds of joints, and proved to be the same with these movable bodies. Some of the seventeen patients had considerable pain for a few hours or days and some had a little fever, but there was no infection and the mobilization of the knee was continued notwithstanding. If there was effusion, this was punctured without delay. No treatment was applied except actively moving the knee as soon as the patient roused from the anesthetic, keeping this up until he is walking around which was usually by the third day, sometimes the second day. Several of the men returned in two weeks to their service at the front. This early functional use of the joint is not only superior to all other methods in the rapidity of the cure but in the perfect functional and anatomic results attained. In their later cases they used local instead of general anesthesia for the operation, and they always work through a lateral vertical incision. They found several times more than one movable body, and hypertrophied fatty processes sometimes accompanied a dislocated meniscus. They warn that the mobilization must be active; passive movements are of no use. The joint should be flexed and stretched, as far as possible each time, increasing the excursions, and keeping this up uninterruptedly, to the point of fatigue. Even the timid and cowardly can be persuaded to do this, but it is essential that some person must be by their side continually, reasoning with them, urging, coaxing, insisting, actually nagging them into keeping up the movements of the joint on which its future soundness depends. The result is proportional to the energy displayed by the persuading attendant and the patient himself. The mobilization is not actually painful, in the true sense of the word, even in severely infected cases. In conclusion they remark that a movable body, displaced meniscus or enlarged fatty process may be the true cause of certain chronic and recurring effusions in the joint rebellious to ordinary treatment.

Hemorrhagic Effusions in Serous Cavities.—Delrez' experiments on dogs have confirmed that blood extravasated in a serous cavity becomes promptly coagulated as under other conditions. But the clots act as a foreign body which irritates the serous membrane, and it responds with exudation. Tapping the serous cavity releases merely the serum and the effusion; the clots are left behind to continue their irritating action. No relief is realized until the cavity is opened and the clots removed. In his research on dogs, he introduced one end of a paraffined cannula into the femoral artery, the other end into the peritoneal cavity, thus realizing a hemorrhagic effusion in the peritoneum as much like clinical conditions as possible. The fluid drawn later by puncture resembled that obtained by defibrinating blood; possibly the respiratory movements, etc., may act like the defibrinating technic. He was unable to apply the research to joints, but says that there can be no reason why the conclusions from the experiments on the pleura and the peritoneum of dogs cannot apply equally well to hemorrhagic effusions in joints.

Blocking of the Kidney After Blood Transfusion.—Goormaghtigh reports the case of a man of 23 with a shell wound of the side of the chest. The operation four hours afterward showed that the axillary vein had been lacerated and both the vein and artery were ligated. The pulse kept imperceptible, the general condition bad; the reds numbered only 3,872,000, the whites 43,600, and transfusion of blood seemed indicated. As only one donor was available, no agglutination tests were made of his blood; the Wassermann reaction was negative. The donor was robust but had just returned from a furlough. He was not alcoholic. About 520 c.c. of his blood was injected by the syringe method in the course of twenty minutes. The improvement was remarkable. By the next day, however, serious symptoms developed, including oliguria and anuria, and the man died the fourth day. Necropsy showed important toxic lesions in the liver, kidneys and heart, confirming the clinical picture of acute and fatal uremia which the man had presented. The acute tubular nephritis explained the blocking of the kidneys but the acute toxic lesions in the liver were enough to explain it without this. The donor's blood may have been temporarily toxic on account of excesses during the furlough.

Sympathetic Ophthalmia.—Van Schevensteen reiterates the vital importance of specialist care of all injuries of the eyes. Experience seems to show that if more than two weeks have elapsed since the eye was infected, there is doubt whether its enucleation then will ward off sympathetic ophthalmia. In two cases of declared sympathetic ophthalmia he instilled mydriatics and gave intravenous injections of arsphenamin. The outcome was satisfactory in one case but not in the other, even though mercury and sodium salicylate were given in addition. His article reviews the present status of sympathetic ophthalmia, and gives the detailed differential blood count in several cases. In Morax' compilation of 39 cases. 13 terminated in total or nearly total blindness, one in suicide, and one with vision of only 0.1. In the 26 favorable cases, visual acuity of 0.3 or 0.4 was left in 5 cases; in the others, from 0.5 to 1.0, but in some of these cases vision deteriorated somewhat later.

Bulletin de l'Académie de Médecine, Paris

Feb. 25, 1919, **81**, No. 8

*Phenol Gangrene. R. Le Clerc.—p. 205.
*Hepaticoduodenostomy for Bile Fistula. S. Mercadé.—208.
Operative Treatment of Hemorrhoids. P. Bazy.—p. 211.
*Cancer of Lips and Tongue in Animals. Cadiot.—p. 218.
*Tuberculosis in Colored Troops in France. L. Moreau.—p. 224.

Phenol Gangrene.—Le Clerc declares that in cases of phenol gangrene of the fingers, amputation is formally called for, as otherwise serious septicemia is liable to be entailed. In a case he describes, the woman of 50 had applied a 5 per cent. solution of phenol to her finger, keeping it constantly moist for twenty-four hours. Besides the gangrene, there were hallucinations, excitement and delirium as with high fever, but there was no fever and the pulse was regular and strong when he saw the woman the twentieth day. She died in collapse the second day after this.

Bile Fistula.—In Mercadé's case, the fistula left after a cholecystectomy refused to heal. After waiting three months, the hepatic duct was released from the fibrous mass in which it was embedded, connecting the stomach, liver, colon and duodenum. The common bile duct had retracted until it could not be discovered, and only 1 cm. of the hepatic duct could be released. An anastomosis was made between this and the duodenum, with smooth, permanent recovery.

Cancer of Tongue and Lips in Animals.—Cadiot comments on the extreme rarity of cancer of the lips and tongue in animals. The few cases that have been published were more probably a mycosis or microbic ulcer. He has found only seven cases recorded of actual cancer of the tongue in animals, including three horses, two cats, one dog and one cow. This rarity of cancer in the tongue and lips is most remarkable when we consider the frequent irritation of lips and tongue in horses and in other animals, domestic and wild.

Tuberculosis Among the Colored Troops in France.—Moreau calls attention to the frequency of tuberculosis among the troops recruited among the natives of the French colonies in Africa and elsewhere. The general condition is not notably modified, but radioscopy reveals that they are profoundly infected with tuberculosis. The change of climate and the physical stress of warfare, etc., fan the latent process into a flame. The bronchopulmonary form of influenza also found a favorable soil in them, with rapidly fatal issue.

Bulletins de la Société Médiçale des Hôpitaux, Paris

Jan. 10, 1919, **43**, No. 1

*Malaria and the Bordet-Wassermann Reaction. S. I. de Jong.—p. 3.
*Exophthalmos in Nephritis. P. J. Rondopoulo.—p. 4.
Influenza at Athens. Sakorrafos.—p. 6.
Paralysis of Last Sixth Cranial Nerves and Cervical Sympathetic Nerve after a War Wound. D'Oelsnitz and L. Cornil.—p. 6.
*Electric Treatment of Hysteric Paralysis. L. Moreau.—p. 10.
*Injection of Air into the Pleura. A. Challamel.—p. 12.

Malaria and Seroreactions.—De Jong emphasizes that the Bordet-Wassermann test reaction is not modified by malaria except during the febrile attacks.

Nephritic Exophthalmos.—Rondopoulo has been examining persons with a tendency to nephritis in order to detect exophthalmos which certain writers say is common with nephritis, while others have never encountered it. He found it in two among fifty-two cases, and says that it seems to average about 3.8 per cent. and to occur in the subacute and chronic cases showing signs of a tendency to uremia. The exophthalmos was of the goiter type, with positive Graefe and Stellwag or Möbius signs in his cases.

Electric Treatment of Hysterical Paralysis.—In Moreau's three cases the functional paralysis or contracture had developed after a burn, or a blow on the chest, or apparently spontaneously. The treatment was with a single intensive application of unipolar galvanization, with a current representing 45 or 50 milliampères and 80 volts. The paralysis was of long standing in two of the cases, rebellious to all previous measures.

Injection of Air Into the Pleura.—Challamel uses a small glass tube with a 6 cm. rubber tube slipped on one end. Some cotton is packed loosely in the other end of the glass tube and the whole is kept in a test tube till ready to use. Then after the effusion in the pleura has been tapped, this glass and rubber tube is interposed between the trocar and the rubber tube connecting with the bulb. The air or oxygen can then be pumped in with confidence that it has been duly filtered.

Lyon Médical

February, 1919, **128**, No. 2

*Radiography of Fractures of the Pelvis. P. Japiot.—p. 81.
*Malaria in Morocco. L. Langeron.—p. 86. Conc'n.
*Latent Gastric Cancer. C. Dunet and E. David.—p. 98.

Fracture of the Pelvis.—Japiot stresses the importance of radiography in cases of apparently simple contusion; also the necessity for radiography of the two sides for comparison, and calls attention to some possible sources of error.

Malaria in Morocco.—Langeron's experience in Morocco has convinced him that the subcutaneous administration of quinin is usually the only reliable method, and that at least 2 gm. have to be given daily. He has never gone above 3 gm. Certain independent generations of the parasites are developing at different times, without connection with the main paroxysm, and hence the organism should be kept continually under the influence of quinin. He warns of the danger of new inoculation by mosquito bites for persons taking treatment as well as for the cured. The healthy carriers of the malaria parasites form a constant danger, but it must not be exaggerated. The history of malaria in Morocco testifies anew to the advantages of a well conducted campaign against malaria even although conditions there render its total extermination impossible at present.

Clinical Picture of Interlobar Pleurisy Induced by Gastric Cancer.—In the case reported by Dunet and David, the gastric cancer had been entirely latent in the man of 44, the only symptoms being those from metastasis in the lungs causing the clinical picture of interlobar pleurisy. Puncture at the point of the supposed encysted pleural effusion brought merely blood, but necropsy showed the minute gastric cancer and the large generalization of the malignant disease through the left lung.

Paris Médical

Feb. 8, 1919, **9**, No. 6

*Objective Examination with Disease of the Digestive Apparatus. P. Le Noir and M. Delort.—p. 113.
Malaria. H. Gros.—p. 120.
*Medical Inspection of Schools. H. Méry.—p. 123.
Intramuscular or Intravenous Injection of Cherry-Laurel Water in Treatment of Chronic Bronchitis and Pulmonary Tuberculosis. A. Grimberg.—p. 124.
Colloidal Metal Preparations in Influenza. P. Richard.—p. 125.

Objective Findings with Digestive Disease.—Le Noir and Delort devote nearly eight pages to a systematic outline for clinical investigation of the case. In a previous article they outlined the systematic interrogation of the patient. By proceeding as they describe, with a regular system, many instructive transient signs may be detected which otherwise would be lost. They are in charge of a *centre de gastro-entérologie*, and their experience with thousands of cases has confirmed the importance of these minor signs as they describe in detail. By following a regular outline for examination time is saved and nothing is overlooked.

The Work of the Medical Inspector of Schools.—Méry remarks that medical inspection of schools dates at Paris from 1879, but no attempt had been made until the last decade to extend the work of the medical inspectors beyond the defense of the school against contagion. In 1910, the city was divided into 210 medical districts for the purpose of school inspection, each inspector having about a thousand children allotted to him. Each child is soon to have its individual health booklet, to record the results of regular examinations through his entire school life and possibly later. The inspector should record the weight, the height, the chest measure, etc., the spirometer findings, the effect of test exertion on the heart, acceleration of the pulse and arterial tension; also the results of muscular tests with the dynamometer. There should be an obligatory general examination every two years. The inspector should be familiar with the normal standards and the normal development of body and mind, and he should be paid enough so he need not be obliged to regard this school work as merely an accessory to his professional work. The making out of the health booklets and the thorough examination as the child enters school for the first time should be regarded and remunerated as an extra function, aside from the habitual duties of the school physician. His routine duties include prophylaxis of contagious diseases and control of the physical education, and these require an inspection visit to the school once a week or possibly twice under certain conditions. His task might be singularly facilitated by the creation of school nurses.

Feb. 22, 1919, **9**, No. 8

*Malarial Neuritis. L. Moreau.—p. 145.
*Hip Joint Disease in Soldiers. E. Beaujard and others.—p. 151.
*Essential Incontinence of Urine. Chavigny.—p. 155.

Malarial Neuritis.—Moreau insists that malarial neuritis or polyneuritis is not so rare as generally supposed; he has encountered nine cases himself. There was facial or radial paralysis in two of the cases, and polyneuritis of the arms or legs in others, with or without plantar or facial paralysis. In one case the muscles in the legs had almost entirely wasted away, and the man could not walk without crutches. The prognosis is always grave, but if there are only slight quantitative modifications of the electric reactions, almost a complete cure may be anticipated. Galvanic electric treatment, massage, quinin, arsenic and a change to mountain air aid in recovery or improvement. The quinin helps to ward off the febrile attacks which usually aggravate the nervous disturbances each time.

Deforming Hip Joint Disease in Soldiers.—Beaujard and his co-workers warn that the roentgen rays sometimes explain a soldier's limping as the result of a rapidly developing, deforming osteo-arthritis of the hip joint. The deformity is of several different types, as they explain with radiograms. They query whether it may not be a premature senile hip joint affection. The fatigues and overexertion of the campaign may have brought on premature senility in these tissues. Certain writers have suggested this as the only possible explanation of various puzzling clinical manifestations.

Essential Incontinence of Urine.—Chavigny comments on the fact that surgeons and urologists have been the ones to handle cases of incontinence of urine, and they have patiently sought for organic factors. The most diverse causes have thus been incriminated, and treatment of these causes by widely differing methods has usually been successful. The reason for the success is that micturition is not a spinal cord function as hitherto taught. It is a brain function, although long training has made a subconscious act of it. There is no need to waste time in analyzing the urine, etc., and there is no use in trying to cure the absolutely incurable cases with grave mental impairment. Waking the subject at night is a simple and effectual means for training to overcome the habit. An excellent device for the purpose is to place between the sheets and the mattress, under the buttocks, two flexible metal plates separated by a layer of cotton. This is the interrupter for the current. Two other plates are held on the pubis in the belt of a suspensory. If urine seeps down to moisten the cotton below, the current passes on, and the electric shock not only wakes the incontinent sleeper, but induces immediate contraction of the bladder sphincter. In any event, cases of essential incontinence should be sent to a psychologist rather than to a surgeon or urologist. Soldiers who are too settled in the habit for it to be overcome, might be grouped in a special company so that they need not annoy others. The ridicule on account of belonging to such a company might realize a cure in some otherwise incurable cases.

Presse Médicale, Paris

Feb. 20, 1919, **27**, No. 10

*Serotherapy of Gas Gangrene. E. Sacquépée and De Lavergne.—p. 85.
*Infectious Processes in the Pleura. J. L. Roux-Berger.—p. 86.
*Grafts of Dead Tissue. G. Bonnefon.—p. 88; J. Nageotte and L. Sencert.—p. 88.

Serotherapy of Gas Grangrene.—Sacquépée and De Lavergne relate experiences with serotherapy in 191 cases of gas gangrene. Recovery ensued in 86.91 per cent. of the cases. In 113 cases the gas gangrene was well under way when serotherapy was begun, but 83.08 per cent. recovered under it. Serotherapy thus has proved useful in both prophylaxis and treatment.

Wounds of the Pleura.—Roux-Berger excises the devitalized tissue when a war wound of the chest has left an infected focus with fistula and an extensive cavity in the pleura. After the pleurectomy, he fastens the lung to the chest wall, in front and back, to keep it expanded, and drains from the rear. He did not lose any of the fifteen patients thus treated, but to relieve the pain and dyspnea he used Crile's anoci-association which seemed to *simplify the after-effects* of the operation.

Grafts of Dead Tissue.—Bonnefont states that in four years of experimental research, using 500 cornea grafts, the transplanted connective tissue always died sooner or later. He disputes the assertions of Nageotte and Sencert to the contrary, but the latter reply that increasing experience has abundantly and repeatedly demonstrated the feasibility of utilizing grafts of nerve and tendon tissue that have been kept in alcohol for some time. These grafts of dead tissue are thus proving a complete success.

Feb. 27, 1919, **27**, No. 12

*Hysteric Bent Spine. Chiray and E. Roger.—p. 105.
*Traumatic Contraction of Sound Artery. C. Viannay.—p. 106.
Operative Treatment of Traumatic Lesions of the Thyroid. H. Alamartine.—p. 107.

Hysteric Curvature of the Spine and Typhoid Spondylitis.—Chiray and Roger relate some cases in which typhoidal spondylitis merged into hysterical camptocormia. Under the influence of the pains in and around the spine, from the acute spondylitis, the spine is held in a vicious attitude and this persists after subsidence of the acute process. In some of their cases from eighteen months to four years had elapsed without the spine being straightened. The disappearance of tenderness on pressure tells when the spondylitis has become extinct. The interval since there has been any fever is also instructive. Potts' disease can be excluded by the involvement of the body of the vertebra rather than of the intervertebral disk; the nervous reactions are livelier, and paresis and paralysis are common. Typhoid spondylitis never leaves ankylosis. As with all similar contracture, repose in a good attitude is the main thing. The man should stay in bed with continuous extension by weights to the legs, the plane of the bed sloping slightly to the head to ensure counter extension. A plaster corset may be useful at first. Counter suggestion is the only treatment when nothing is left but the hysteric contracture.

Traumatic Contracture of Sound Artery.—Viannay calls this "arterial stupor," and explains it as the reaction to the trauma by the peri-arterial sympathetic nerve. The circulation through the artery persists, but it is reduced to a much smaller stream. Conditions gradually right themselves without gangrene. This arterial stupor seems to be an important factor in the spontaneous arrest of hemorrhage.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 8, 1919, **49**, No. 10

*Proliferation of Adipose Tissue in Knee. J. Dubs.—p. 289.
Placenta Extract in Diagnosis of Pregnancy. E. Frey-Bolli.—p. 299.
Colloidal Metals and Fixation Abscess in Influenza. H. Hodel.—p. 310.

Traumatic Proliferation of Adipose Tissue in Knee.—Dubs calls this condition Hoffa's disease, and describes eight typical cases. In only three was the diagnosis made before the operation, but in one of these the diagnosis was unmistakable, the doughy pads each side of the patella being readily recognized. In all the cases there was a history of an accident to the knee a few weeks before. There is usually in the pronounced cases considerable atrophy of the quadriceps, but the use of the knee is not interfered with except for the pains. These are localized in the front of the joint, generally at the inner margin of the patella, but they are never so intense or protracted as with incarceration of the meniscus. The only treatment is by removal of the proliferated fatty processes if simple conservative measures do not prove effectual.

Schweizer Archiv f. Neurol. und Psychiatrie, Zurich

1918, **2**, No. 2

*The Prevailing Psychologic Trend in Psychiatry. E. Bleuler (Zurich).—p. 181.
*Pathologic Anatomy of Nervous System in Epilepsy. M. Tramer.—p. 202.
Psychiatric Analysis of Jean-Jacques Rousseau's Confessions. V. Demole.—p. 270. In French.
*The Spine Reflex. S. Galant.—p. 305.

The Psychologic Trend in Psychiatry.—Bleuler comments on the valuable lessons learned from traumatic neuroses, especially under workmen's compensation legislation. The wish to obtain an indemnity or to escape the horrors of warfare maintains the traumatic neurosis, and he asserts that there is no persisting neurosis except where there is something to be gained by its persistence, even if it is only to show a hated enemy, "See, now, what you have done." Traumatic neuroses following an earthquake promptly subside spontaneously. He does not hesitate to add that certain morbid conditions are iatrogenous, that is, they are bred by the physician, either from ignorance or mistaken zeal suggesting some ailment which the subject does not have, or magnifying a trifle into a serious condition. But these iatrogenous maladies could not develop without a predisposition. Nervous dyspepsia is a prototype of this class of cases. One of his axioms is that excessive zeal for the improvement of the world is a sign of a mental anomaly. "Social and sex questions and the woman question are psychic more than economic problems." "Those are right who say that psychic anthropology is more important than bone measurements."

Pathologic Anatomy in Epilepsy.—Tramer's monograph is based on experiences at the national Swiss institution for epileptics and a cantonal insane asylum. He was unable to find any pathognomonic lesions with epilepsy, but, at the same time, he states that with the severer cases there is great probability that the Betz' cells will show certain changes and that marginal gliosis will be found. Also that the discovery of these morbid changes will afford some probability of a retrospective diagnosis of epilepsy, especially in cases of much mental impairment.

The Spine Reflex.—Galant noticed that stroking along the spine of a quite young infant, held with its abdomen on his left palm, elicited a characteristic reflex movement. It is rapid, and resembles the curving of the body of a lizard as it winds its way rapidly through the grass. The infant keeps this lateral curve for a time. He examined 150 young infants and thirty-six idiots between 7 and 30 years old. The spine reflex occurs more constantly in infants than the Babinski, and is stronger and persists longer. It can be elicited by stroking with the handle of a hammer or by pricking. The reflex movement is so pronounced that the infant is liable to slip off the supporting hand unless one is careful. It grows weaker as the months pass, and it could not be elicited in one 7 months infant. All but one of the 105 infants presented this reflex, but only six of seventeen epileptics, and it was typical only in one in this group.

Gazzetta degli Ospedali e delle Cliniche, Milan

Jan. 30, 1919, **40**, No. 9

*Intestinal Lambliosis. M. Mantovani.—p. 66.

Lambliosis.—Mantovani never found dysentery traceable to the lamblia, but there was always diarrhea in the cases of lambliosis he has encountered. It evidently has some pathogenic power, inducing a proteiform set of symptoms up to ulceration in the rectum, but the subacute enteritis shows nothing characteristic. There is no specific treatment, but arsphenamin has the best record, not from any direct action on the lambliosis but by improving the general condition. One man, in robust health otherwise, had occasional attacks of colic, the pain above the umbilicus, with tenesmus and diarrhea up to thirty or forty passages a day, with eosinophilia of 10 per cent., and the lamblia in the stools. One woman of 50 with severe diarrhea for three months, rebellious to all treatment, with enormous numbers of the lamblia in the stools, and 8 per cent. eosinophilia, succumbed to progressive debility. Her brother had died not long before after several months of a similarly protracted and rebellious diarrhea, with the lamblia in the watery stools.

Feb. 2, 1919, **40**, No. 10

*Sputum Vaccine in Pneumonia. G. A. Pari.—p. 73.
*The Epidemic of Influenza. C. Mannini.—p. 76.
*Para-Influenzal Paralysis of the Heart. A. Tomaselli.—p. 7[illegible]

Sputum Vaccine Therapy [illegible] neumonia. [illegible] ere reports add [illegible] is p [illegible] tements as to the therapeutic efficacy of a vaccine made from the mixed sputa of twenty patients with influenzal bronchopneumonia. He now has a record of thirty-one cases and styles the results very encouraging. He sterilizes the pyovaccine, as he calls it, in the autoclave.

Influenza.—Mannini describes a number of nervous and psychic symptoms observed in the inmates of an insane asylum when influenza swooped down on it; 87 per cent. developed the disease, and the heart in a number showed marked disturbance. Tomaselli describes four cases in which the patients succumbed to paralysis of the heart when they were apparently far along in convalescence from influenza.

Policlinico, Rome

March 9, 1919, **26**, No. 10

*Streptococcus Pandemicus. M. Segale.—p. 289.
*Correction of Ankylosis of Knee. U. Camera.—p. 290.
*Iodin in Treatment of Goiter. A. Pennisi.—p. 296.
Abuse of Iodin in Treatment of the Throat. G. Bilancioni.—p. 300.

Etiology of Influenza.—Segale's later experimental research apparently confirms the etiologic importance of the streptococcus which he has cultivated from influenza cases and which reproduces a similar set of symptoms when guinea-pigs are inoculated with it on the nasal mucosa. He is convinced that this *Streptococcus pandemicus* is something new; others have cultivated the same germ in the present pandemic. The animals died when inoculated even with cultures that had been passed through a Chamberland filter. Hemorrhagic effusions were found in the peritoneum and lungs, with marked congestion of the respiratory apparatus. The same findings were observed in guinea-pigs treated with the filtrate that had been heated to 55 C. for an hour.

Simple Method for Traction on a Stiff Knee.—When the ankylosis is not due to the bones, Camera corrects it by placing the heel on another table as the patient reclines with the trunk on bed or table. The leg thus forms a bridge, and he ties a pail to the knee so it hangs a little below the knee. By filling the pail with water, the weight can be graduated to induce the traction desired. This slow, gradual, gentle traction usually accomplishes the reduction in a single sitting; at most in two or three, and the correction can be maintained in a plaster dressing.

Goiter.—Pennisi made local and general injections of Durante's aqueous iodin potassium iodid solution, in a strength of 1 or 2 per cent. in treatment of goiter. In three of four cases described, the cystic and parenchymatous goiter subsided completely. In the other case, the goiter subsided but returned during a pregnancy soon after. Probably resumption of the treatment would have a favorable effect now. In three cases of exophthalmic goiter the condition improved materially under the same treatment, but the other measures taken at the same time may have been responsible for this. In any event, the iodin did no harm.

February, 1919, **26**, Surgical Section No. 2

*Treatment of Chronic Osteomyelitis. L. Franco.—p. 49.
*Traumatic Lesions of Yellow Spot. G. Ricchi.—p. 60.
*Appendicitis Complicating Movable Kidney. S. Rolando.—p. 68.
*Projectile in the Heart. I. Scalone.—p. 71. Cont'n.

Chronic Ulcerating Osteomyelitis.—Franco lauds the fine results realized with Durante's method of clearing out the focus into sound tissue, leaving a bowl shaped cavity. A square flap cut in the adjoining tissues, either skin alone, or skin and muscle, or skin, muscle, periosteum and bone, according to the circumstances, is twisted around and fitted in the gap, after the latter has been treated with iodin. The flap is held in place with one or two small nails, and a lightly compressing bandage is applied. No suture, no tamponing, no draining. The dressing is not changed until the fifth day. By the seventh or eighth day the flap has become adherent and the nails can be taken out. Sixteen cases are described in detail with illustrations of four, showing the prompt and radical cure of processes which had dragged along for months, rebellious to all other measures. This method was first applied by Durante, April 2, 1917, but in 1896 he published experimental research demonstrating its feasibility. The war brought the opportunity to apply it in practice.

Trauma of the Yellow Spot.—Ricchi reports that in two of his six cases the injury of the macula lutea was not accompanied by other lesions. Some were war and some industrial accidents. The course and outcome are described in detail.

Appendicitis as Complication of Movable Kidney.—Rolando relates that in the twenty-five cases in which he has done nephrectomy on the right side, there were signs of appendicitis only in three. The pain induced by the movable kidney may be mistakenly ascribed to the appendix when the latter is quite sound. When it is possible to draw the appendix out through the lumbar incision for the operation on the kidney, the probabilities are that the appendix is sound. Inflammatory adhesions would make it impossible to draw up the appendix in this way.

A Projectile in the Heart.—Scalone quotes D'Antona to the effect that sometimes one is more truly a surgeon when he does not operate than when he does. This applies particularly to a bullet in the heart when it seems to be borne without disturbance, as in a case described in detail. His experimental research on large, robust dogs, showed that adhesions developed or not directly proportional to the amount of inflammation accompanying the wounds.

Riforma Medica, Naples

Feb. 22, 1919, **35**, No. 8

Granulations in the Lymphocytes. A. Ceconi.—p. 146.
Factitious Bladder Stones. C. Guarini.—p. 148.
*Induced Pneumothorax. G. Cicconardi.—p. 150.
Prophylaxis of Buccal Disease. B. De Vecchis.—p. 152.
*The Nervous System in the Tuberculous. A. Ferrannini.—p. 153.

Induced Pneumothorax with Hemoptysis.—Cicconardi states that when the hemoptysis is extensive, the hemorrhage issuing from an actual tear in some vessel in the lung, then prompt resort to artificial pneumothorax may save the otherwise doomed patient. It is indispensable to locate the injured vessel by the localized pain, gurgling sounds, râles at the base, etc. The needle is introduced in the third or fourth intercostal space, between the mamillary and anterior axillary lines. From 800 to 1,000 c.c. of nitrogen or oxygen or air are introduced, and more is introduced every four or five days to maintain the compression on the lung. The hemoptysis is usually arrested at once; only rarely is a second intervention of the kind needed in twenty-four or forty-eight hours. The use of the manometer has reduced to zero the danger from an artificial pneumothorax, while it is an efficient adjuvant in treatment of the pulmonary process as a whole, and not merely the bleeding vessels, he reiterates in conclusion.

The Nervous System in the Tuberculous.—Ferranini remarks on the rapidity of the reaction to stimuli of different kinds in the tuberculous, demonstrating the extreme excitability of the nervous system. The reaction is not only exceptionally prompt but it is also exceptionally intense, and it reaches its maximum sooner than under other conditions. On the other hand, the reaction is exhausted sooner, and the tonic capacity is less. Various laboratory instruments record these findings, showing the "impulsive" character of the reactions in the tuberculous, along with their hypotonic and hyposthenic character, as an aid in differential diagnosis. The toxins are responsible for this extra excitability of the nerves, and this in turn affects the endocrine system, or vice versa, with a resulting vicious circle. To this must be added toxic irregularities in growth, especially of the nervous system. For example, the normal growth of the brain may be exaggerated, and it may pull up the spinal cord and its roots, and this ascension of the cord may be rendered more injurious by an exaggerated growth of the vertebrae. The spinal roots then are stretched and compressed, with obvious injury. Such findings in the young may turn the scale in dubious cases. Even in adults, they may give the clue when we reflect that with advancing age the nervous system normally tends to display just the opposite characteristics. Irritable weakness at any age should warn of possible tuberculosis.

Rivista Critica di Clinica Medica, Florence

Jan. 18, 1919, **20**, No. 3

*Cancer of the Ampulla of Vater. A. Ristori.—p. 25.

Cancer of Ampulla of Vater.—Ristori was impressed by the greenish brownish jaundice of the man of 62, while the presence of urobilin in the urine and of stercobilinogen and stercobilin in the feces testified that the obstruction of the common bile duct could not be complete. The liver and gallbladder were enormously enlarged; the pancreatic duct seemed to be freely permeable. A vague painfulness in the region of the lower end of the common bile duct had preceded the jaundice and this, in connection with occult blood in the stools, confirmed the assumption of cancer on or near the ampulla of Vater, revealed later by necropsy.

Jan. 25, 1919, **20**, No. 4

*Neuroses of the Heart. A. Sbrocchi.—p. 37.

Cardiac Neuroses.—Sbrocchi emphasizes the diagnostic importance of the absence of symptoms from any other organs when the disordered heart action is due to a neurosis, while signs of a tendency to nervousness are marked. The most important are tremor of the eyelids when the eyes are closed, tremor of the fingers when the hand is extended and the fingers spread, a sensation of heat in the ears, cold hands and feet, dermographism, and exaggerated reflexes in general. Among the further testimony to the nervous character of the heart disturbances is the attenuation of the conjunctival and pharyngeal reflexes. The subjective symptoms show nothing characteristic.

Archivos Españoles de Pediatria, Madrid

January, 1919, **3**, No. 1

*Pseudotumors in the Brain. L. Morquio (Montevideo).—p. 5.

Pseudotumors in the Brain.—Morquio refers to the clinical picture in children which seems to indicate a tumor in the brain, but the gradual subsidence of all symptoms or the necropsy findings disprove this diagnosis. He reports six cases in detail. The youngest child was 3 and the oldest 12 years old. A trauma was incriminated in two cases; one child gave a positive response to the Wassermann test. The headache was not continuous, but occurred in paroxysms, very seldom severe enough to make the children cry or complain. The attacks lasted a few hours or days followed by periods of calm. In some it was occipital, in others frontal, in still others the headache was diffuse. In some it seemed to be relieved by vomiting. As a rule, the headache came on as the children got up in the morning, but sometimes it appeared without any regularity but more commonly after eating. Some of the children had pain on pressure of the skull over the frontoparietal groove. At necropsy of one child with intercurrent diabetes insipidus, who had succumbed to cachexia, nothing suggesting a tumor was found to explain the symptoms during life except a focus of softening in one peduncle. The experiences related justify trephining in cases of apparent brain tumor in children. If this relieves and the symptoms show a tendency to retrogress, the operation can stop there. This alone would arrest and possibly cure the pseudotumor disturbances. If there is an actual tumor, the operation can be completed later, although, Morquio adds, the outcome is almost inevitably fatal, even in cases of simple hydatid cyst. The complete syndrome of a brain tumor in a boy of 12 kept up for four years with intermissions and intermittent otitis and final tuberculosis. Necropsy failed to disclose any tumor in the brain. The youngest child died five months after a negative operation for supposed hydatid cyst. The brain symptoms had entirely retrogressed after the operation but returned in an acute form five months later. No necropsy. The negative operation for a mistakenly assumed hydatid cyst proved fatal in one girl of 9 with hemiplegia and aphasia. Nothing to explain the hypertension and paralysis could be discovered at necropsy. In the sixth and last case, the boy of 9 with the complete clinical picture of brain tumor and optic neuritis was taken into the hospital for study of the case. He acquired a mild typhoid, with a relapse, and as this subsided all the brain symptoms disappeared with it to complete recovery.

Brazil Medico, Rio de Janeiro

Jan. 25, 1919, **33**, No. 4

*Disordered Heart Action in the Obese. A. Mac-Dowell.—p. 25.
*Caustic Treatment of Epithelioma. C. de Rezende.—p. 28.

Disordered Heart Action in the Obese.—MacDowell reviews the literature on disordered heart action with obesity, and analyzes its mechanism. His conclusions are to the effect that the different forms of disturbance, insufficiency of either ventricle, or of the auricles, or a combination of these are due more to some upset in the endocrine system than to the lesions in the heart itself from the tendency to fat production. The endocrine disturbance is responsible for the obesity in the first place, and also for the disordered heart action.

Caustic Treatment of Epithelioma.—De Rezende's success with a caustic mixture in treatment of superficial cancers was mentioned in THE JOURNAL, Aug. 24, 1918, p. 694, and the formula for his mixture was given. He here gives photographs of another case in which it proved equally successful, the epithelioma on the cheek, near one nostril, rapidly subsiding to an apparently complete cure under eighteen applications of the mixture at five day intervals.

Medicina Ibera, Madrid

Jan. 25, 1919, **6**, No. 64

Chronic Nephritis. S. Pascual.—p. 77. Cont'n.
Tin in Staphylococcus Infection. E. Castañs.—p. 80.
Varicose Veins in the Obese. Sicilia.—p. 84.

Prensa Medica Argentina, Buenos Aires

Jan. 30, 1919, **5**, No. 24

Cerebral Nystagmus. B. Argañaraz.—p. 235. Cont'n.
*Circular Crusher and Knot Tyer. E. Finochietto.—p. 240. Conc'n.
*Technic for Pylorectomy. C. I. Allende.—p. 242.
*Tetanus. F. Eguia.—p. 244.

Circular Clamp.—Finochietto here concludes his study of modern surgical clamps, etc., by presenting a model of his own devising which, instead of crushing the stump flat, squeezes it into a small cylindrical shape, no larger than the appendix. One of the numerous illustrations shows a part of the stomach crushed thus into a small cylinder, with a clip clamped on at each end of the cylinder. The cylinder is then cut between the clips and the stump can be buried like the stump of the appendix.

Pylorectomy.—Allende gives an illustrated description of Polya's method of pylorectomy, and states that his numerous experiments on the cadaver have confirmed its superiority over other technics.

Tetanus in Infant.—Eguia gave tetanus antiserum freely to the infant that had developed tetanus when 10 days old. He injected 10 c.c. of the antiserum, giving 0.10 gm. chloral by the mouth, and tepid baths, keeping the head cool, every two hours. The mother's milk was fed by the spoonful every three hours, and the umbilical cord was kept moistened with the antiserum. Orders were given to administer 0.25 gm. chloral in an enema every three hours in case of difficulty in swallowing. During one very severe paroxysm he gave chloroform and oxygen. The child recovered after a long and severe siege of the disease. It had been given in the course of eighteen days 140 c.c. of the antiserum, and was able to nurse by the mouth by the nineteenth day.

Revista Medica, Puebla, Mexico

Feb. 15, 1919, **1**, No. 7

*The Center of Respiration. B. Avalos.—p. 145. Conc'n.
*Transactions of Congress on Tabardillo. E. Landa.—p. 152.

The Center of Respiration.—Avalos' research on twelve dogs confirms his clinical experience, all testifying that there are three respiration centers. Centers that control respiration have been found in the medulla; this group has charge of the abdominal, thoracic and facial respiratory movements and also of the spinal centers, but the medullary centers in turn are under the control of centers in the brain.

The Typhus Congress.—Nearly nine pages are devoted to the proceedings of this conference to discuss Mexican typhus or tabardillo. The main features of the congress were given in the Mexico Letter, Feb. 8, 1919, p. 435.

Revista de Medicina y Cirugia, Havana

Feb. 10, 1919, **24**, No. 3

Disturbances in Vision with Liver Disease. J. S. Fernández.—p. 59.
Bacteriology of Influenza. M. M. Dominguez.—p. 64.

Revista de Medicina y Cirugia Practicas, Madrid

Feb. 7, 1919, **122**, No. 1541

Etiology of Morbid Constitutions. C. Calleja.—p. 129.

Semana Medica, Buenos Aires

Jan. 16, 1919, **26**, No. 3

Present Status of Tuberculosis in Children. J. P. Garrahan.—p. 53.
Tuberculosis at Rosario. J. B. Valdes.—p. 63.
*Intensive Serotherapy in Tetanus. E. F. Solari.—p. 67.
Psychophysiology of Aviators. J. A. López.—p. 68.
Advantages of Film Treatment of Burns. C. Cortelezzi.—p. 71.

Antiserum Treatment of Tetanus.—Solari relates that the man of 42 with severe traumatic tetanus was injected in the course of seven days with fifty-six ampules of antitetanus serum—a total of 84,000 units, with recovery. The unit is that of the United States Public Health Service.

Siglo Medico, Madrid

Feb. 8, 1919, **66**, No. 3400

*Obstruction of Common Bile Duct. J. Blanc Fortacin.—p. 101.
Autoserotherapy of Influenza. R. Aguirre.—p. 104.
*Treatment of Hyperthyroidism. E. Bonilla.—p. 105.
Automovement. A. S. Herrero.—p. 108.
Alcohol as Factor in Cirrhosis of Liver. F. F. Martinez.—p. 109.
Infectious Jaundice. M. Vilá.—p. 110. To be continued.

Obstruction of Common Bile Duct.—Blanc Fortacin asserts that in all his operations on the bile ducts he has been constantly impressed with the disadvantages and the dangers of the expectant treatment that has been applied before the patient is referred to the surgeon. The condition has been allowed to go from bad to worse under this excessively prolonged expectant treatment, adhesions given time to develop, and inflammatory processes around the liver, etc., rendering the operation far more difficult and dangerous. The gallbladder is generally in such a morbid condition in cases of cholelithiasis that its functional capacity is negligible, and hence its removal can do no harm while this does away with the source of production of gallstones.

Hyperthyroidism.—Bonilla expatiates on the forms of hyperthyroidism apart from exophthalmic goiter, especially the form which accompanies ovarian insufficiency at the time of the menopause. Cold, sweaty hands are a sign of ovarian insufficiency, indicating vasomotor disturbance.

Grèce Médicale, Athens

July-September, 1918, **20**, No. 13-18

Malaria in Macedonia. J. P. Cardamatis.—p. 21.

October-December, 1918, **20**, No. 19-24

Influenza at Athens. J. Cecikas.—p. 31.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1919, No. 2

*Malaria in Weltevreden and Batavia. M. L. van Breemen.—p. 1.
*The Mosquitoes of Java. R. M. Mangkoewinoto.—p. 41.

Malaria in Java.—Van Breemen conducted a thorough census throughout Weltevreden and Batavia to determine the prevalence of malaria. The most convenient method for doing this was by examination of the spleen of children between 2 and 12. The palpation was done in the recumbent position, with drawn up knees, and the child was promised a penny after the examination. Each child examined was marked on the stomach with silver nitrate. In this way 14,000 children were examined in a native population of 180,000. The incidence of enlarged spleen is shown on maps in small circles containing a black sector, with an angle of at least 3.6 degrees, representing the percentage of the spleen index. The districts near the sea and where there are artificial fish ponds are conspicuous by the entirely black circles, showing 100 per cent. spleen index. As postmortem examination is obligatory at Batavia, the chart showing the mortality may be regarded as correct, and the mortality figures correspond closely to the spleen index. The report is in parallel columns of Dutch and English. It concludes with a study of the eleven species of anophelines mosquitoes found in the region. The creation of artificial fish ponds has been advocated by the government, and they have been useful in supplying an excellent food, but the mosquito nuisance from them is such that Breemen thinks they have done more harm than good.

Mosquitoes in Java.—The seventeen varieties of the anophelines and their larvae found in Western Java are described in detail, with illustrations and accounts of their habits.

Hospitalstidende, Copenhagen

Jan. 8, 1919, **62**, No. 2

Pararenal Kidney Cyst. P. V. Tuxen.—p. 33.
*Operative Treatment for Lesion from Ascaris. A. Møller.—p. 38.
Tertiary Erythemia in Child with Congenital Syphilis. H. Boas.—p. 41.

Surgical Lesion from Ascaris.—Møller's patient was an infant of 22 months under treatment for ascarides. In one week he passed seventy. Then symptoms of peritonitis compelled laparotomy, and an ascaris was found in a pus pocket, but this pocket was encapsulated and there was no peritonitis. The toxic effects of the masses of ascarides were long felt. He was brought back to the hospital four months later with further masses of ascarides. A second course of santonin has apparently banished them completely.

Jan. 15, 1919, **62**, No. 3

*Anemia with Leukemia. C. Gram.—p. 77.

Leukemia with Anemia.—In the first of Gram's two cases, the man of 66 presented lymphatic leukemia with enlarged spleen and anemia of the pernicious type, but no enlargement of lymph glands. The second patient was a young woman with the same clinical picture plus enlarged lymph glands. Treatment in the first case was with repose, iron and arsenic, and two courses of roentgentherapy. Under this the condition has kept fair during the year to date. As the man feels well he has not returned for examination, but has kept up his iron and arsenic pills. The spleen is still two fingerbreadths below the umbilicus, but it does not feel as hard as the year before. The young woman died; the leukocytes in this case showed rapid and remarkable fluctuations, the numbers varying from 326,000 to 2,100.

Hygiea, Stockholm

Jan. 31, 1919, **81**, No. 2

*The Machinery of Thought. S. E. Henschen.—p. 49.

The Machinery of Thought.—Henschen presents evidence that there is a center for formation of conceptions, and that this center is located in the left brain and cortex. The intellect is like a power house receiving energy from the specific senses and transforming them into power, which in turn is distributed wherever needed. His charts and data seem to locate the seat of the mind and spirit in the frontal lobe. His minute study of the topography, the limits, and the organization of our senses, especially the sense of sight, and their functions, shows that all this is of fundamental importance for a knowledge of the action of the brain in general and of the machinery of thinking.

Ugeskrift for Læger, Copenhagen

Feb. 6, 1919, **81**, No. 6

*Primary Syphilis. H. Haxthausen.—p. 217.
Spontaneous Delivery of Pedunculated Uterine Fibroma: Two Cases. J. Bichel.—p. 226.

Primary Syphilis.—Haxthausen concludes from his experience with 200 cases of syphilis in the primary stage that treatment must be with large doses of arsphenamin, beginning with a full dose at the first injection, and concluding the arsphenamin course with an intramuscular injection. Mercurial treatment must be energetic and prolonged. These principles have given uniformly good results in his experience. The number of injections of the arsphenamin and the period of the infection—within the limits of the primary phase—are of less importance than generally supposed.

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THE VALUE OF BIOLOGIC PRINCIPLES IN SURGICAL PRACTICE *

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It cannot be too often emphasized that surgery should be more a science than an art. A surgeon who is a dexterous operator and who skilfully amputates a leg that with patience and scientific application could be saved is merely a good artisan, and is distinctly inferior to the surgeon who could save the leg even though he should be a bungling operator. The ideal is to be thoroughly imbued with the principles of the biologic sciences, thoughtfully to apply these principles, and at the same time to be mechanically skilful.

The science of anatomy is essential to the mechanics of surgery. He would be a poor locomotive mechanic who did not understand the construction of his engine; and in operations on the neck, for instance, a surgeon who is ignorant of anatomy would be like the proverbial bull in a china shop. A knowledge of anatomy is essential to good surgery, but in the ever shifting problems of tissue repair and metabolism, physiology is just as necessary. The principles underlying an operation are correct only if they conform to the laws of physiology and of repair of the tissue or organ that is affected. If we could get away from blindly following what some one says merely because he says it, and do things because of reasons that have sound biologic foundations, we should undoubtedly do work more satisfactory to our patients and to ourselves.

HYPEREMIA

Let us take an illustration from the practical work of a surgeon and see how thoughtful application of physiologic principles would have rendered a problem that appeared difficult more easy to solve: Hyperemia is connected in one way or another with all surgical questions, whether they concern treatment of inflammation or repair of a wound. It has long been known that blood is an enemy of the tubercle bacillus, and that obtaining a good supply of healthy blood is the only method of combating tuberculosis. About two decades ago when a patient with tuberculous peritonitis and ascites sought surgical treatment he might have been subjected to one of several procedures: One surgeon would have advised opening the abdomen and letting the sunlight in. Another thought it was best to dust the intestine with some special powder. Still another believed in drainage with a single tube, others with multiple tubes. All these methods secured more or less satisfactory results. Each surgeon, seeing his patient recover after using his own method, earnestly thought that this was the only correct procedure. The situation resembled very much that described in a poem in an old school reader in which four blind men went to see an elephant. One fell against its side and thought the elephant was like a wall; another embraced its leg and declared it resembled a tree; the third grasped its tail and said the animal was constructed like a rope, and the last felt its tusks and concluded that the elephant was very like a spear. The moral was that though each was partly in the right they all were in the wrong. So all these surgeons who were using different methods were unconsciously working on a principle that produced hyperemia, and it was this hyperemia, induced partly by draining off the fluid and so relieving pressure and partly by handling the intestine, that cured the tuberculosis. It was many years, however, before this fact was acknowledged by the various partisans.

The surgical treatment of slow or threatened gangrene has also been much discussed. Carrel and Guthrie,[1] after two experiments, concluded that the blood circulation in the leg of a dog could be completely reversed within six hours. They severed the femoral artery and vein just below Poupart's ligament and united by suture the cardiac end of the artery to the distal end of the vein, and the distal end of the artery to the cardiac end of the vein. After a few hours, when red blood was seen returning, they assumed that the circulation was reversed. I think it can now be stated, however, that it is impossible to reverse the circulation in this manner. In a series of experiments which have been reported elsewhere,[2] we have shown that when the severed femoral artery and vein of animals are sutured together in a reversed direction there is no real reversal of the circulation, and the arterial blood never goes more than a short distance below the knee and is then quickly switched back to the iliac veins through the dilated collateral vessels. Evidently what happened in Carrel's experiments was that dissection paralyzed the vasoconstrictor nerves, and the dilated capillaries permitted red arterial blood to flow through unchanged. When the sciatic and crural nerves are divided in a dog, red blood appears in the femoral vein because of the extreme dilatation of the capillaries. Clinically this is often seen to follow an application of the elastic tourniquet which, if left on for even a short time and removed, produces an intense flushing of the limb until the temporarily paralyzed vasoconstrictors have resumed their function. Many useless operations have been done attempting so-called reversal of the circulation in

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* Read before the South Carolina Medical Association, Florence, S. C., April 16, 1919.

[1] Carrel, Alexis, and Guthrie, G. C.: Ann. Surg. **43**: 203-215, 1906.

[2] Horsley, J. S., and Whitehead, R. H.: A Study of Reversal of the Circulation in the Lower Extremity, J. A. M. A. **64**: 873-877 (March 13) 1915. Horsley, J. S.: Reversal of the Circulation in the Lower Extremity, Ann. Surg. **63**: 277-279 (March) 1916.

threatened gangrene. The only good accomplished was damming back the venous blood and forcing the small amount of arterial blood that reached the tissues to stay longer than it normally would and so deliver to the tissues more nutrition than would be possible when the arterial blood was quickly drained off by unobstructed veins. This can be very simply effected by ligating the femoral vein.

SURGERY OF GASTRO-INTESTINAL TRACT

Surgery of the gastro-intestinal tract suffers from the lack of application of physiologic principles. Take, for example, the popular operation of gastro-enterostomy. It does relieve the symptoms of many patients with duodenal or gastric ulcer. The unfortunate minority, however, that we would like to forget still have their symptoms, and restoration of the normal channels by undoing a gastro-enterostomy is an operation not infrequently performed. The cases that are cured by gastro-enterostomy have never been fully explained. Some say it is a drainage operation, and yet in draining other hollow viscera we do not open at the lowest point. We drain the gallbladder and the urinary bladder from the part opposite the most dependent portion, and we do an enterostomy in the distended loop of bowel that is nearest the incision, because we know that normal contraction or peristalsis will keep the bladder or bowel empty if an opening is made. By some it is claimed that gastro-enterostomy cures because the acidity of the gastric juice is lessened, and still others assert that by short circuiting the course of food, rest is given the ulcer; yet roentgenoscopy reveals that unless the pylorus is closed a considerable portion of food continues to go by this route, and no pyloric closure seems to be permanent unless a resection is made.

PERISTALSIS

Recent physiologic research by Cannon and Washburn,[3] which has been confirmed by Carlson[4] and others, has demonstrated that the hunger pains, or so-called pangs of hunger, in a normal stomach are due to excessive peristaltic contractions of the stomach. It has also been shown that the pains that come on with clocklike regularity after meals in duodenal or gastric ulcer are not produced by acid erosion of the ulcer by the hyperacid gastric juice, as was formerly taught, but are due to contraction of peristalsis on gastric nerves made sensitive by the inflammation of the ulcer. The character of the gastric juice has nothing to do with the pain except so far as it excites an abnormal amount of peristalsis. Food or sodium bicarbonate lessens peristalsis for a while and so relieves pain. Recent investigation seems to show that the stomach has a limited supply of nerves that conduct pain,[5] and these nerves, which are deep in the stomach wall, are made more sensitive than normal by the inflammation around an ulcer. Consequently, they register impulses of pain from the pressure of peristalsis that in a normal physiologic condition they would not register.[6] *It is probable that gastro-enterostomy relieves pain by facilitating the emptying of the stomach and so lessening peristalsis.* This, however, is largely the treatment of a symptom and not an effort to remove a pathologic condition and to restore tissues to their physiologic state.

In surgery of the intestine, the work of Cannon and Murphy in their studies of peristalsis after resection of the bowel has not received proper attention. Lateral anastomosis is still the method employed by many surgeons though, as shown by Cannon and Murphy,[7] peristalsis is practically abolished in the region of such an anastomosis. Food can be pushed through only when a column of it extends into a proximal (oral) loop where peristalsis is unimpaired. Postmortems in dogs with lateral anastomosis showed that there was always an accumulation of food at the site of the lateral anastomosis even when the rest of the intestinal tract was free, because severing the circular fibers, in this operation, abolished peristalsis, and the blind pouches could not be completely emptied. They found that in an end-to-end union there was not the slightest stasis of intestinal contents at the site of operation. Merely because the lateral union usually gives no disagreeable symptoms, its use has been continued. If the patient did not die it was assumed that he had sufficiently recovered. With attention to the triangular mesenteric spaces and careful closure of these and of other raw surfaces before the bowel is opened, together with disinfection of the bowel ends after opening, as good technical results are obtained in end-to-end union as after the lateral method, with the advantage of securing normal peristalsis and normal emptying.

SURGICAL DRAINAGE

One of the common problems in surgery, and a most interesting one, is surgical drainage. This question has revolved around the mechanics of drainage and what material to use, as well as when to drain; but the manner in which drainage acts has been largely disregarded. In surgical drainage, mechanical measures that are followed by fortunate results would appear ridiculous when no biologic problems exist. In preventing infection of a raw surface while draining a deep abscess, gauze is often placed over the raw surface. If we could convert this into a mechanical proposition and imagine that the pus was a solution of methylene blue and that it was flowing over this raw surface which had been covered with absorbent gauze to prevent contamination, we know that both the gauze and the wound would be deeply stained. However, this method of protection does act in a beneficial manner, and a wound is often by this *means* kept from septic infection. The drainage of a peritoneal abscess is practically always up hill, and is usually successful. If mechanics were the only principle, how could an appendical abscess ever be drained by putting a tube down to it through an abdominal incision? The whole method of drainage really depends on a reversal of the circulation in the local lymphatics and is chiefly a biologic process. It is nature's effort to extrude a foreign substance.

If a boy sticks a splinter into his toe and mild infection occurs, the sore "runs" seropus for many days. Finally, the splinter "works" to the surface and is removed. The next day drainage stops and the wound rapidly heals. The splinter has been washed to the surface by the reversed lymph current in an effort to extrude this foreign substance. After the splinter has been removed there is no stimulus for any further extrusion, the lymph current resumes its normal direction, and the wound closes.

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[3] Cannon and Washburn: An Explanation of Hunger, Am. J. Physiol. **29:** 441, 1912.

[4] Carlson, A. J.: The Control of Hunger in Health and Disease, University of Chicago Press, 1916, pp. 62-83.

[5] Kast and Meltzer: Med. Rec. **70:** 1017, 1906. Ritter: Zentralbl. f. Chir. **35:** 609, 1908. Langley: Brain **26:** 23, 1903.

[6] Ginsburg, Harry; Tumpowsky, Isidor, and Hamburger, W. W.: The Newer Interpretation of the Gastric Pain in Chronic Ulcer, J. A. M. A. **67:** 990-994 (Sept. 30) 1916. Hardt, L. L. J.: Pain in Active Pathologic Processes in Stomach or Duodenum, J. A. M. A. **70:** 837-839 (March 23) 1918.

[7] Cannon and Murphy: Ann. Surg. **43:** 519-520.

In drainage of the abdominal cavity, where there is an enormous lymph space and where lymph is abundantly poured out, the effort to extrude a foreign body, which in this case would be a drainage tube, causes an immense flow of lymph that carries through the tube much of the septic products that would otherwise have been absorbed. Drainage, then, prevents positive pressure in the suppurating cavity and at the same time has the equally important function of being a stimulus for a reversal of the lymphatic circulation. When a wound is packed with gauze, the gauze acts as a foreign body; and instead of the wound absorbing the pus with which the gauze is saturated, the tendency is for the lymphatic circulation to be reversed, and for lymph to be poured out into the gauze in an effort to wash it away. Portions of the body in which the lymphatic supply is not so abundant as in the abdomen will require dependent drainage because there is not enough lymph constantly to flush out the septic cavity, and gravity must aid. The beneficial action of the cigaret drain, which is clogged with coagulated lymph in a few hours, becomes comprehensible when we view it as an exciting cause for reversal of the lymph circulation.

NEUROLOGIC AND BONE SURGERY

There are many problems in neurologic surgery which require some knowledge of physiologic principles in order to be settled satisfactorily. Spiller and Frazier have demonstrated that section of the posterior sensory root of the gasserian ganglion produces what is called "physiologic extirpation" of the gasserian ganglion. It has been known for years that a nerve which is injured on the central side of its ganglionic cells does not regenerate; yet when the operation of division of the posterior sensory root for tic douloureux was suggested, it was received with some skepticism. This operation is safer than surgical extirpation of the gasserian ganglion, and is followed by less trophic disturbance.[8] The plugging of foramina in the skull from which neuralgic sensory nerves have been removed in order to prevent regrowth of the nerves has sometimes been done with metal screws. Because an iron screw can stop a hole in a piece of wood is not necessarily a reason why it should be employed in living tissue. On the other hand, some substance that does not cause reaction in bone is preferable. What happens after an iron screw is applied? Nature in an effort to extrude the irritating foreign substance removes lime salts in its neighborhood, the bone softens, the screw becomes loose, and the nerve can grow around it.

The fashion for plating fractures fortunately is on the decline. Hundreds and probably thousands of fractures have been plated with heavy metal plates for no reason except that it appeals to the mechanical sense and because some eminent surgeons advocated this operation. In many cases it is followed by attempted extrusion of the plate and, like the splinter in the boy's toe, the plate has to be removed. To the casual observer it seems strange that permanent union does not always occur when a nice cabinet joint is made between the ends of a fractured bone and the ends are held securely in position by steel plates and screws. The same process goes on here as when an effort is made to plug a foramen in the bone with iron. The iron is an irritating foreign substance, and in order to extrude it, nature causes an absorption of the lime salts. As a result, a screw which may at first be firmly fixed in the bone soon becomes loose. But more important is the fact that osteoporosis is induced in this effort at extrusion, and callus formation is thereby prevented or retarded. A poorly fixed fracture without the use of metal is more likely to give eventual good results than the neatest union by means of heavy plates and screws.

EFFECT OF EMOTIONS

That emotions have considerable bearing on the prognosis in certain cases of surgery has long been accepted. Cannon[9] has demonstrated that fright or profound anxiety causes a stimulation first of the sympathetics and then of the suprarenals. The action of epinephrin amounts to a prolonged stimulation of the sympathetic nervous system. Thus the body is put on what may be called a war basis, the circulation is more active, the heart beats faster, the pupils are dilated, respiration is accelerated, and metabolism generally is increased. Often there is so much glycogen released from the liver as to cause marked glycosuria, especially if the body is at rest; but if the emotions are accompanied by physical action, as fighting or running, this excessive amount of sugar may be consumed. The moral is that in some surgical cases it undoubtedly makes the prognosis better if emotions of fear or anxiety are allayed as much as possible. In diseases such as exophthalmic goiter, measures that abolish or diminish fear or excitement are of the greatest importance.

TRANSPLANTATION OF ORGANS

Skin grafting and transplantation of organs or tissues are dependent on biologic laws. Surgeons who have had great experience in this type of work, such as Lexer[10] and Davis, believe that skin grafts from others than the patient are practically never permanent. They either melt away at once or, if they appear to "take," are later absorbed and replaced by connective tissue. It has been suggested that tests, as for transfusion of blood, would be of benefit in selecting a donor for skin grafting; but so far this has not been put to any extensive practice. The transplantation of highly developed organs, such as a kidney, from one animal to another, even if of the same species, is always a failure. The kidney may functionate for a while, but the fine biologic differences in the body fluids of the donor and the recipient cause degeneration, and the kidney eventually becomes a mass of connective tissue. This has been acknowledged by Carrel, Guthrie and others who were at one time enthusiastic about the success of such a procedure. The reconstruction of channels, as the bile ducts, from tissues that have no immunity to the irritating discharges with which they must come in contact is also unwise. Operations in which strips of fascia, pieces of vein,[11] and other tissue unaccustomed to the action of bile are used ultimately result in failure, no matter how skilfully the mechanical part of the operation is done.

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[8] Frazier, C. H.: A Surgeon's Impression of Trigeminal Neuralgia, J. A. M. A. **70**: 1345-1350 (May 11) 1918.

[9] Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, New York, D. Appleton & Co., 1915, pp. 52-80.

[10] Lexer, E.: Ann. Surg. **60**: 172-174, 1914.

[11] Horsley, J. S.: Reconstruction of the Common Bile Duct, J. A. M. A. **71**: 1188-1194 (Oct. 12) 1918.

CONCLUSION

These are merely a few instances of what every surgeon sees in his work, and they illustrate the profound influence that the application of biologic principles has on surgical practice. Real progress in surgery lies not so much in cultivating the art of surgery and in striving after mechanical dexterity, which is important but can be acquired in a few years, as in the study of biologic principles that concern function, nutrition, metabolism, and repair of tissues, and in the thoughtful application of these principles to every operation and to every method of surgical treatment.

A CASE OF TETANUS ILLUSTRATING MODERN METHODS OF TREATMENT

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During the past four years, thousands of cases of tetanus have been treated with varying degrees of success. But there is still doubt in the minds of many as to the efficiency of antitetanic serum as a therapeutic measure.

Since the causative organism of the disease is anaerobic, it is probably most toxic when excluded from oxygen either by being in the deep tissues of the patient or in combination with anaerobic organisms, such as *B. subtilis* or *B. pyocyaneus,* which will exhaust any supply of oxygen present. *B. tetani* may be cultivated, however, in increasing supplies of oxygen until it finally loses its virulence. It may be locked up in a healed and therefore sealed wound for months and regain a practical toxicity during the advent of pyogenic organisms to a new wound, operative or otherwise, when tetanic symptoms disappeared months before; or, indeed, after no previous signs of tetanus had manifested themselves. A case[1] has occurred in which, 200 days after injury, an operation was performed for bone grafting. Six days after this, tetanus set in and three days later the patient was dead.

REPORT OF CASE

History.—A boy, aged 16 years, while in company with three other boys, Oct. 17, 1918, hunting ducks with No. 12 gage shotguns, was accidently shot in the left thigh at a distance of 2 or 3 feet. He was taken to the Monterey Peninsula Hospital, where he was treated. On the tenth day he showed the first signs of tetanus. (This is a common lapse of time before the appearance of symptoms.) It is said that 25,000 units of antitetanic serum were given before he came to us, November 3; that is, seventeen days after injury and seven days after tetanic symptoms were first noticed.

The boy himself said he first noticed stiffness in his back and then his jaws felt locked. His teeth were "so tight that he could take food only through straws." He bit his tongue several times when his teeth came together, and evidence of this he had on admission.

He arrived at the University of California Hospital with marked trismus, retraction of head, gross Kernig sign, opisthotonos, boardlike abdomen, generalized contracture of body muscles and a fine risus sardonicus, a late and serious sign of the disease. His body was profusely perspiring, his respirations rapid.

Physical Examination.—Seventeen days after the original injury, on the outer and posterior aspect of the left thigh at the junction of the upper and middle thirds, there was an irregular quadrilateral area, 16 by 8 cm., from which the skin was denuded, exposing the muscular tissue. It appeared to be a surface wound, healthy red in appearance and almost flush with the skin. Roentgenoscopy disclosed about fifty small shot scatered about the femur at this level. There were markedly enlarged, discrete, painless glands in both groins. The jaws could not be opened more than 0.75 cm. between the incisors. The constantly recurring convulsions, which threw all the muscles of the body into tonic contraction at regular intervals, whereby the opisthotonos and the risus sardonicus were emphasized, were extremely distressing to the patient. In the intervals his respirations and pulse became very rapid and he perspired profusely.

Treatment and Course.—Our treatment was based on (1) securing rest, sleep and food; (2) postponement of active interference with the wound until tetanic symptoms should disappear, and (3) administration of antitetanic serum.

Thus the first order ran as follows:

Patient to have any food he can handle or cares for, liquid or semisolid. Morphin sulphate, 0.01 gm., after meals and every four hours for three doses.

Chloral hydrate was prescribed the same day, 0.6 gm. every four hours; and at the end of the same day morphin sulphate, 0.008 gm., and chloral hydrate, 0.6 gm., became routine every four hours. The teeth were open 0.75 cm. and the gag reflex was kept under control by the sedatives. Chloral is a particularly valuable antispasmodic in these cases of tetanus. The muscular contractions are responsible for so great a metabolism that the efficacy of a rectal drip or rectal feedings is negligible. The only way to prevent fatal exhaustion of a moribund patient is to maintain nutrition. This can be done by securing sufficiently long intervals of remission from spasms, so that the patient is able to swallow or at least will not reject the food. In the first fifteen hours, this boy had 19,500 units of tetanus antitoxin intravenously and considerable nourishment. At times and simultaneously with the injections of serum, he often had relief from chloroform inhalation, under which he was kept as long as an hour. Night and day every four hours, first 5,000 and later 10,000 units of antitoxin were administered almost entirely by the vein. In seven days he received 172,000 units intravenously. Once we gave him a special intraspinal dose combined with an intramuscular one in addition. For five days he made no obvious improvement, but became no worse and was at times easy. The gratifying feature was that the trismus still remained incomplete.

There should be an explanation of the large doses of antiserum used in the treatment of the case under question, the continued doses of chloral and morphin, and the route selected for the administration of the serum.

Improvement was noticed first on the ninth day. The temperature was normal on the tenth day. There were no symptoms on the twenty-fifth day except local signs of a mildly suppurating wound which was, considerably later, curetted.

Treatment was confined to (1) rest, quiet, nourishment obtained by intradermal injections of morphin at four hour intervals, with chloral by mouth at the same intervals and chloroform when indications required it, and (2) intravenous injections of antitetanic serum up to 10,000 U. S. A. units, at four hour intervals. The main symptoms were universal tetanic spasms, intense reflex sensibility, and incomplete but severe trismus. There was no surgical interference with the wound while tetanic symptoms remained.

COMMENT

MacConkey[2] says:

> If we compare the mortality of all the cases treated with serum with that of the cases treated without, we must allow that the use of the serum brings little if any advantage. But if we compare the mortality of the cases treated with large amounts of serum with the mortality of the case treated with small amounts, then the beneficial results following such use of serum become manifest.

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[1] Tetanus Lighted up by Operation, Brit. M. J. 1:883 (June 30) 1917.

[2] MacConkey, A.: Brit. M. J. 2:609 (Oct. 10) 1914.

In his article he gives the figures of 51 and 70.2 per cent. as the recovery under the treatment with small and large doses, respectively. In addition, as if thoroughly to confirm, he mentions Van der Bogert's quotation of Strock (1907), who treated his cases of tetanus during six years with small doses of serum and had a mortality of 100 per cent. Then he treated five cases with very large doses, and the mortality was 20 per cent.

What are large and what are small doses? Strock used in the individual treatment of his cases from 150,000 to 587,000 U. S. A. units. When we consider that a prophylactic dose is considered effective with from 500 such units in mild cases to 1,500 units in severe cases, we get an idea how great are to be the doses employed in the therapy of the disease. In the early stages of the war in England, we were satisfied with using a total of some 60,000 units, but I have no doubt in my mind that we used by far too small and too infrequent amounts.

Often one is accustomed to compare the use and dosage of antidiphtheritic serum with antitetanic serum; but owing to the peculiarly fixed way in which tetanic toxin combines with its chemotactic allies in the nervous system, one may only justly compare the state of *Bacillus tetani* with that stage of diphtheria which causes diphtheritic palsy.

We gave our antitoxin almost entirely intravenously. I am sure that if we had attempted to give our large doses of serum intraspinally six times a day, either we should have so stimulated the already critically sensitive reflexes to a point of the utmost danger or we should have had to endanger the patient's life with repeated administration of chloroform or ether. Our patient reacted well to the antitoxin given in this way. He developed during the first two injections some urticaria and irritation of the skin, showing a mild form of serum sickness, and once later he became a little cyanosed and dyspneic.

I am not convinced that the intrathecal route is the wisest in all cases. For rapidity of action I believe it is not so quick as the intravenous route. Intravenous anesthesia is no whit tardier than spinal anesthesia, and such anesthesia acts through the central nerve cells. The vascular system is more deliberate and more uniform in its distribution than the casual administration of a fluid into the spinal theca. We tried once an intrathecal injection of the antitoxin, and subsequently the patient had more distress in the way of elevated temperature, more rapid respirations, and spasms than by any of the intravenous injections.

Vaccination by the Spaniards.—The news item recently published in The Journal in regard to the enforcement of vaccination in Madrid, renders interesting the centennial, Feb. 12, 1919, of the death of the Spanish physician, Dr. F. Balmis, who was sent by the king of Spain, by royal order, dated June 3, 1803, to vaccinate the natives of the Spanish possessions in America. The official report of this "sanitary crusade" to New Spain was published in 1806. Stops were at the Canaries, Porto Rico, Caracas and Vera Cruz, and headquarters were established at the capital of Mexico. Balmis also organized a vaccination service for the Philippines. An account of his trip in the *Siglo Medico* states that he succeeded in taking fresh vaccine to Macao and Canton, which the British had never succeeded in doing as the vaccine brought from England had always proved inert. At St. Helena he found the English residents skeptical in regard to vaccination. The expedition lasted two years and nine months. Similar expeditions were sent out by Holland to its East Indian colonies and by Portugal to Brazil.

BROMIDROSIPHOBIA

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There exist a few small groups of nervous and mental disorders which involve the skin only secondarily, and which cannot logically be classified with the true neurodermatoses. Despite this fact, it is on the dermatologist that the responsibility of their clinical recognition largely rests. The more common of these affections, such as trichotillomania[1] and trichokryptomania belong in the category of "tics," or habit spasms. Next in frequency of occurrence are some of the various fear psychoses, which are characterized by a morbid dread of parasitic contamination, and of which acarophobia[2] and syphilophobia are typical examples. By patient and careful questioning, one can occasionally uncover the basis on which a fear of this kind rests, and, if the patient is sufficiently intelligent, the possibility of infection ever having taken place can be explained away. I once encountered such an instance in the case of a young woman who for more than three years had suffered from a severe traumatic dermatitis of the hands. The patient, who appeared mentally normal, had had an unfortunate matrimonial experience, and been granted a divorce from her husband about two and one-half years before she came under my professional care. Her mother told me that twenty or more times each day the younger woman would go quietly to the bathroom and thoroughly wash and scrub her hands with soap and water and a small brush, afterward applying an antiseptic, such as alcohol or compound solution of cresol. Naturally, the various local remedies prescribed for the dermatitis gave very little relief. After the patient's confidence had been gained, she confessed that her previous husband had contracted a gonorrheal urethritis about nine months prior to the time of their separation, and it was through fear of infection that she was constantly bathing and scrubbing her hands. When the matter was fully explained to her by Dr. A. L. Skoog, to whom I referred her for treatment, and she was convinced that there was no possibility of her becoming contaminated by this route, she discontinued the frequent scrubbing, and the dermatitis promptly disappeared.

Stokes[3] has reported a series of somewhat similar cases. Recently, I encountered a phobia of a different type, the fear being directed against an odor instead of an organism:

History.—A fairly intelligent man of 63, a retired farmer, had had the trouble about fourteen months. Eighteen months prior to the date of my first examination, he had developed an itchy disorder of the trunk. This affection had persisted for a fortnight or longer, but finally disappeared, leaving no trace. A few weeks later, the presence of the troublesome odor first became apparent. The trunk and axillae were primarily involved, but the area from which the "disagreeable emanation," as the patient rather grandiloquently called it, arose, gradually passed downward, and for the last twelve months had been confined to the feet and ankles.

He described the odor as of variable character. At the outset, it resembled that of "rotten onions," but at the time of the first consultation he thought his feet smelled as if he had not washed them for many months, although, he assured me, they had been bathed twice on that very day. He said that as a result of the constant and disagreeable odor, his friends had practically deserted him, and his children (he is a widower) did not care to have him come to their homes.

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[1] Besnier: Monats. f. prakt. Dermat. **13**: 572, 1889. Blaisdell, J. H.: J. Cutan. Dis. **34**: 363 (May) 1916.

[2] Pusey, W. A.: Principles and Practice of Dermatology, New York, 1917, p. 971.

[3] Stokes, J. H.: Tr. Sect. Dermat. A. M. A. 1918, p. 214.

Examination.—The skin on all parts of the body was found to be normal for that of a man of 60. The soles were pink, soft and moist, and there was no exfoliation or maceration of the epidermis in the interdigital areas. There was no evidence of hyperhidrosis. The patient's shoes, which had been worn for several weeks, were no more odorous than those of an ordinary individual.

On the several different occasions that I have had opportunity to examine the patient, at no time have the extremities exhibited any unusual or particularly disagreeable odor. Despite this fact, the patient always insists that the odor is present, and that the condition is gradually growing worse instead of better.

The olfactory organs apparently are normal, and the commoner odors are recognized with ease and certainty, and without exaggeration. On matters other than the one here discussed, the patient converses intelligently and well, considering the fact that he is a man of limited education.

COMMENT

It may be that further investigation will reveal the factor underlying the psychosis in this particular case, but up to the present we have been unable to secure any tangible evidence to aid in the solution of the problem.

TREATMENT OF PNEUMONIA

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An epidemic of pneumonia began at Camp Wheeler about Oct. 5, 1918, and continued through the months of October, November, December and part of January, 1919. It appeared coincidently with an epidemic of influenza which swept through the camp at that time.

As two radically different methods of management were employed in the treatment of these pneumonias during this epidemic, a study of the results offers a fruitful field of observation and some helpful suggestions. It offers an opportunity to make a fair comparison between the so-called open air or open ward treatment (Group 1), in which the patient is kept practically in the open air, and the close ward management (Group 2), in which the patients are kept in warm, comfortable surroundings, well protected from cold and chilling, from currents of cold air sweeping over them through open corridors and doors, and from bathing, changing bed linen, caring for excretions, etc., in cold, chilly rooms.

The comparison between these two methods is fair because: First, the epidemic was continuous during the time this study was made. Second, the same disease, namely, influenza, and no other, was prevalent and acted as the underlying causal factor. Third, the same type of pneumonia, pathologically, was about equally distributed through the two groups; in Group 1, namely, those men treated from Oct. 5, to Nov. 24, 1918, the necropsy records showed 51.3 per cent. of lobular, 42.3 per cent. of lobar, and 6.3 per cent. of acute interstitial pneumonia; in Group 2, namely, those treated from Nov. 24, 1918, to Feb. 1, 1919, the postmortem records showed 33.3 per cent. of lobular, 60 per cent. of lobar, and 6 + per cent. of acute interstitial pneumonia. Fourth, a study of the bacteria present in the sputum and at necropsy in the fatal cases of the two groups revealed like organisms, differing only in small percentages in each group, with no predominance of virulent organisms in the group showing the highest mortality. Fifth, the number of cases observed in each group was large enough to correct any erroneous conclusions which might be drawn from the study of a small number of cases; in Group 1 (open ward group) 966 active cases, and in Group 2 (closed ward group) 435 active cases were observed. Sixth, the question of specific medication or special form of medical treatment did not operate as an important disturbing factor. There were minor differences in the management of the two groups of cases relative to the use of cardiac stimulants, sedatives, fluid intake, diet, specific serum medication, use of vaccines, etc., but these differences were not important and probably had little if any effect on the number of deaths in either group.

The method of management from Oct. 5, to Nov. 24, 1918, was the so-called open air or open ward treatment. It can be thus summarized:

1. All windows and doors in the wards were to be kept open day and night. Rain, cold winds and damp night air were no contradiction to the order.
2. No screens nor blankets were to be hung up at the windows or placed before the doors to prevent the free circulation of air in the wards.
3. Soldiers in the wards were encouraged to keep their heads close to the windows and lie so that the cold air sweeping in from the outside could be better breathed in. If a soldier complained of a cold draft of air on his head, he was told it was good for him; that the fresh air would make him well.
4. No cotton jackets or chest protectors were to be used. The patients were to be well supplied with blankets.
5. Ward fires were to be allowed to go out at night. On cold, damp days the wards were always cold and chilly, because all windows and doors were open. Under the open ward or open air treatment (Group 1) 966 patients with acute pneumonia were cared for between Oct. 5 and Nov. 24, 1918, with 135 deaths, a mortality of 13.9 per cent. November 24, while the epidemic was at its height, a radical change in treatment was made, as follows:

1. All windows and doors in the wards were ordered closed and patients guarded in every way possible from drafts of cold air, chilling and exposure.
2. All sick soldiers with pneumonia on outside porches were ordered moved into wards and cared for indoors where they were warm and comfortable.
3. Every soldier with pneumonia was provided with a cotton jacket to keep the chest warm and to protect it from drafts and currents of cold air.
4. Ward surgeons, nurses and corps boys were instructed to handle and care for their patients so as to avoid, at all costs, chilling. The bedclothing was to be kept tucked in. The arms were to be kept under the bed covers. Plenty of blankets were to be used on cold nights, etc.
5. Fires in wards were ordered kept going day and night. Wards were to be kept free from a feeling of chill in the air. This could not always be done on cold days.
6. Special nurses were provided for the desperately sick.
7. Bathing was discouraged except for purposes of cleanliness, and then only when wards were warm.

8. Attending medical officers were cautioned to avoid prolonged examinations and protect the patients well from chilling while examinations were being made.

Under the closed ward treatment (Group 2) as outlined in the foregoing, 435 patients with active pneumonia were cared for between Nov. 24, 1918, and Feb. 1, 1919, with fourteen deaths, a mortality of 3.2 per cent.

The question at once arises, Is the lowered mortality here shown in favor of the closed ward treatment a real gain in the management of the disease over the open ward method, or are the favorable results only a coincidence, an expression of a lowered mortality arising naturally in the latter part of the epidemic? It has been stated by Abrahams, Hallows and French[1] that the mortality is higher and the disease more severe in the early part of epidemics of influenza complicated by pneumonia. To quote from these authors: "It is when the epidemic is in its earlier days that it is apt to spread like wildfire and cause the greatest damage and the highest death rate."

The knowledge that we possess relative to the lowered vital force created in the tissues of the body when those structures are subjected to chilling, and a consideration of the lowered cell resistance against invading organisms created by exposure to currents of cold air, make it unreasonable to accept the open ward treatment of pneumonia as the best form of management. Any clinician who has walked through long wards of soldiers desperately sick with pneumonia, every man lying with his head and chest next to an open window through which, on cold days and nights, cold and often damp winds are blowing, who has seen these men with pinched, blue faces and cold hands and feet and has heard them again and again request that the windows and doors be closed to keep them from feeling chilly, cannot help but be convinced that this form of management for sick patients with an acute disease like pneumonia is unwise.

These patients must be kept warm and comfortable. Their skins must be red; not blue. They must feel warm; not cold. They must be cared for so as to be in a high state of febrile reaction with a high, full, bounding pulse. Heat, not cold and chilling, produces this effect.

The study of these 1,400 cases of pneumonia showing the low death rate in the Group 2 cases justifies this conclusion and points the way to the more successful management of this disease.

CONCLUSIONS

1. The epidemic of pneumonia coincident with influenza at Camp Wheeler showed a mortality of 13.9 per cent. in 996 patients (Group 1) treated by the open ward, cold air method.

2. The epidemic of pneumonia coincident with influenza at Camp Wheeler showed a mortality of 3.2 per cent. in 435 patients (Group 2) treated by the closed ward, no-chilling method.

3. While a diminished virulence of organisms or a higher resistance of soldiers may in part explain the lowered mortality in Group 2 (closed ward group), the difference in the mortality rate between the two groups is so pronounced that it seems reasonable to conclude that the no-chilling form of management employed in treating the Group 2 patients assisted in decreasing the mortality.

4. The evidence here presented warrants the more general employment by the profession of the closed ward, no-chilling management of pneumonia complicating influenza.

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[1] Abrahams, Adolphe; Hallows, Norman, and French, Herbert: Lancet 1: 1 (Jan. 4) 1919.

HEMOTHORAX FOLLOWING GUNSHOT INJURIES OF THE CHEST *

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Since hemothorax is one of the most frequent complications of chest injuries, it would probably facilitate our understanding of this condition if we review first the causes and sequence of events leading up to this serious complication.

Available statistics on gunshot wounds of the chest are indeed interesting and enlightening, especially when one compares the mortality statistics of this war with previous ones. Prior to the Civil War, accurate statistics were unavailable, but we are led to believe that chest wounds were invariably fatal. In the Civil War the death rate from chest wounds was 62 per cent.; in the Crimean War, 90 per cent.; in the Spanish-American War, 27 per cent., and in the present war available statistics show a wide variation, some investigators placing the mortality rate at 10 per cent., while others place it as high as 20 per cent. These conflicting figures are easily understood, and an accurate estimation cannot be obtained until a later date.

It would be natural to expect that the mortality rate of chest wounds should progressively drop with each succeeding war on the commonly accepted supposition that this mortality rate depends on the humaneness of the rifle bullet, and that this humaneness is due to the decreased sectional area and the increased velocity of the modern rifle projectile. However, this apparently beneficent advantage has been more than neutralized by the introduction of the high-explosive shell and the peculiar character of the present warfare, which necessitates a greater exposure of the upper part of the body.

Wounds of the chest comprise more than 2 per cent. of all casualties, and more than one half of these are due to rifle and machine-gun bullets. Deaths may be divided in the following percentages according to the location at which they occur:

1. *Battlefield.* One enemy investigator who examined 300 dead on the field found that 112 had fatal gunshot injuries of the thorax.

2. *Casualty clearing station and evacuation hospitals.* These show a mortality rate as high as 40 per cent.

3. *Base hospitals.* Here the death rate according to some authorities averages 8 per cent., while according to others it is 4 per cent. Soltau's records show a mortality of 27 per cent. of all chest cases reaching a medical unit.

The causes of death are twofold: anatomic and septic. Anatomic causes comprise the greater proportion, and these are the deaths occurring on the field or shortly after first medical aid is received. These anatomic causes are: (*a*) hemorrhage due to injury of the large vessels; (*b*) double pneumothorax; (*c*) shock; (*d*) edema of the lung with asphyxia, and (*e*) complicating injuries of other parts. Sepsis is responsible for a number of deaths at the evacuation hospitals, and according to Soltau the following organisms are responsible for 9 per cent. of the deaths: gas-producing organisms, 48 per cent.; streptococci, 40 per cent., and lung organisms, 12 per cent.

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* From U. S. Base Hospital No. 1.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several tabulated case reports. The complete article appears in the author's reprints.

CASE OF HEMOTHORAX

S. C., Pvt. Co. C, 151st Machine Gun Battalion
Date injured, Oct. 30, 1918

Description of Wound	Wound of entrance, left chest, fifth interspace, midaxillary line; shrapnel; foreign body still present
Immediate Symptoms	Was in sitting position when struck; walked 600 yards to dressing station; marked shortness of breath; no expectoration of blood
Operation	Simple dressing
Physical Findings	Right side normal. Right border heart at midsternum. Apex fifth interspace, 1 cm. inside of midclavicular line. Slight reduplication second sound. Heart apparently rotated backward to the right. Left chest: no evidence of diaphragmatic motion on left side but right lung covers heart during inspirations;dulness begins in third interspace. Fluid below. No sign of compression above. Marked curvature of spine conveyed to the right. Dulness on left side below eighth dorsal spine. No Grocco sign. In dull area lost breath sounds, diminished vocal fremitus. Absent tactical fremitus. Small amount fluid
Roentgen Findings	The heart is slightly displaced to the right. The left chest in its inferior half casts a dense shadow which obliterates the costophrenic angle and is probably due to a hemothorax. Two metallic fragments are noted in this region. The largest one measures 1.5 cm.
Aspirations	*Not indicated*

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/13	98.6	88	22	
11/14	99.0	80	20	
11/13	98.6	82	20	White blood count, 13,880; polymorphonuclears, 58 per cent.; lymphocytes, 42 per cent.
	100.0	88	20	
11/14	98.0	84	21	
	99.0	90	21	
11/15	98.4	86	20	No cough; no expectoration; slight dyspnea on mild exertion
	100.0	92	21	
11/16	98.0	84	20	
	98.8	84	20	
11/18	98.0	86	20	General condition good
	98.8	88	21	Gaining in weight
11/20	98.6	84	21	Urine normal
	98.8	86	21	Temperature always normal
11/22	98.0			
	98.6			
11/24	98.6	..	..	Evacuated to Class D. Condition good

The injuries to the thorax may be classified according to the structures involved:

1. Injuries to chest wall. Muscle laceration is always present in varying degrees, depending on whether the missile is a bullet or a shell fragment. Fracture of the ribs is, strange to say, an infrequent complication, and in seventy-five cases that I have observed, in only three were there fractured ribs.

2. Injuries to lung and pleura. Laceration of pleura and lung is always present in penetrating wounds, and the extent of the injury again depends on the character of the missile. Such injuries result in one or all of the following conditions: pneumothorax, hemothorax and lung collapse.

Unilateral pneumothorax is found most frequently in injuries due to shell fragments and to a lesser extent from rifle bullets. Double pneumothoraces, as I mentioned above, are included in the battlefield death rate.

Hemothorax is a most common finding and occurs in over 80 per cent. of chest injuries. It is a result of injury to vessels in the chest wall or is primarily due to bleeding from lacerated lung tissue.

Lung collapse of the affected lobe or contralateral lobe is an invariable result of injury, and it is probably due to Nature's attempt to control the hemorrhage from the bleeding surface. Both lung collapse and hemorrhage may occur without any perforation of the thoracic cage, and an ordinary tangential wound may be responsible for both conditions.

IMMEDIATE SYMPTOMS

On questioning over fifty patients with perforation of the lung, I elicited the following information: Those injured by rifle or machine-gun bullets experienced a light blow in the chest or back. Those sustaining shrapnel injuries experienced a heavy shocklike blow and were forcibly thrown to the ground.

Pain was the first symptom noted and was always described as only moderately severe, increasing with each respiration and referred directly to the site of the wound; but in about 10 per cent. of the cases it was referred to the shoulder, and in only one case was it referred to the upper abdomen. Most of the patients were able to walk distances varying from 100 yards to 3 miles, depending on the amount of dyspnea.

Nausea and vomiting—those precursors of shock—occurred in only 10 per cent. of the patients questioned.

Faintness in varying degrees was experienced by all, but only one became unconscious.

Dyspnea is a most constant symptom, and accompanied every penetrating chest wound, and was invariably complained of even by those suffering only tangential wounds. Here again the degree of dyspnea depended usually on the size of the missile. Machine-gun bullet injuries result in less discomfort than shrapnel wounds, which cause severe injury to the parietes with a consequent greater irritation of the pleura.

CASE OF HEMOTHORAX

C. C. S., Pvt. Co. L, 18th Infantry. Date injured, Oct. 4, 1918

Description of Wound	Gunshot wound, left chest, penetrating; wound of entrance near left axilla; *imbedded near sternum in* fifth interspace; shrapnel
Immediate Symptoms	Stricken down; crawled to shell hole; expectorated small amount of blood on second day after injury; some shortness of breath
Operation	Simple dressing; rest
Physical Findings	Respiratory excursion left side markedly decreased. Heart sounds normal. Dulness from third interspace downward. Heart: apex in fifth interspace, 2 cm. inside nipple line; breath sounds diminished anteriorly and clearly audible posteriorly; tactile and vocal fremitus diminished; probable organized clot or greatly thickened pleura
Roentgen Findings	In the region of the left costophrenic angle and extending up to the region of the fourth interspace there is a shadow of increased density which is probably the result of a thickened pleura or fluid. Left lung: its inferior half casts a dense shadow probably due to a hemothorax
Aspiration	*October 31, negative. November 10, negative*

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/ 1	101.4	100	20	
11/ 2	100.4	96	24	Moderately severe dyspnea
11/ 3	101.4	92	22	Unable to walk on account of leg injury; dyspnea on exertion; no cough
11/ 4	100.4	96	24	
11/ 5	100.4	92	20	
11/ 6	100.0	94	20	
11/ 7	99.0	92	20	
11/ 8	100.2	84	20	Fluoroscope shows dense shadow, probably blood clot. 11/11: White blood count, 7,600; polymorphonuclears, 72 per cent.; lymphocytes, 28 per cent. 12/1: Temperature normal; no respiratory distress. Negative aspirations probably due to presence of organized clot. Dyspnea lessening. Condition good. Gaining in weight. Evidence of lung expansion
11/ 9	100.0	100	24	
11/10	98.6	90	22	
11/11	99.8	100	24	
11/12	98.6	92	22	
11/13	98.8	80	20	
11/14	98.0	96	20	

Cyanosis, according to those in a position to observe, is not a marked or constant symptom.

Probably those injured so severely as to go into shock must be included in the battlefield or casualty clearing death-rate, for I have seen only three patients who were so affected.

Hemoptysis, according to most observers, occurs in 90 per cent. of the cases; and in all patients whom I have questioned, with the exception of two, I received a definite history of hemoptysis. This was one of the first symptoms and to the patient the most alarming one, especially if the accompanying dyspnea was severe.

CASE OF HEMOTHORAX

G. P., Pvt. Co. I, 309th Infantry. Date injured, Nov. 11, 1918

Description of Wound	Shrapnel wound, penetrating right scapula region near posterior axillary line; no wound of exit
Immediate Symptoms	Severe pain right upper chest; was able to walk 1 kilometer; hemoptysis immediate, lasting seven hours; cough since then continuous with occasional blood-streaked sputum
Operation	Débridement of wound; thorax not opened
Roentgen Findings	The heart is slightly displaced to left side. Right lung shows evidence of a metallic fragment 2.5 cm. by 1.25 cm., lying on the level of the eighth rib about 3 cm. to the right of the median line surrounded by an area of increased density, which extends to the axillary line and which is probably due to the presence of hemothorax. There is evidence of a fracture of the sixth rib on its posterior aspect. Surrounding the fragment is a shadow of lesser density which may be due to the presence of suppurative focus
Physical Findings	Respiratory excursion equal on both sides. Heart: apex beat, fifth interspace; left border in nipple line. Left chest normal; dulness from midaxillary line posteriorly right side and from sixth dorsal downward; tactile and vocal fremitus diminished; whispered voice not heard posteriorly
Aspiration	Not indicated; no cardiac or respiratory embarrassment; temperature normal

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/13	98.6	88	26	White blood count, 18,840; polymorphonuclears, 60 per cent.; lymphocytes, 40 per cent.
	98.6			
11/14	98.4	88	24	
	98.6	89		Slight cough increased on mild exertion
11/16	98.0	86	22	
	98.4			Expectoration moderate in amount; never blood-tinged
11/17	98.6	84	20	
	98.8			
11/18	98.6	86	21	Slight shortness of breath after mild exertion
11/20	98.6	84	21	
11/22	98.8	82	20	General condition good; appetite good, increasing in weight
11/24	98.6	80	20	Urine normal Temperature normal every day. Evacuated to Class D November 24; condition good; no change in physical findings

The amount of blood expectorated varied from blood-tinged sputum to mouthfuls of blood, and in every case in my series the hemoptysis lasted not longer than four days, probably until the injured lung had collapsed and effected hemostasis.

As regards treatment, I will confine myself strictly to cases I have observed; consequently a discourse on this all-important question will necessarily be as brief as the treatment accorded these particular patients. The records show that of twenty-five cases, twenty-two were surgically treated by simple débridement of the wound of entrance, with removal of the foreign body if readily accessible. Three cases were subjected to radical open operations in which the lung was exposed, the foreign body removed, the blood clot evacuated, and the pleura muscles, etc., closed in layers. Of these three cases, two developed signs of infected fluid from seven to ten days later, and resection with drainage was performed. The remaining patient made an uneventful recovery, and examination two weeks after operation showed only a small amount of blood in the costophrenic angle, with slight collapse of the lower lobe.

All gunshot wounds of the chest were kept under observation and treatment at the evacuating hospitals for not less than ten days, so that all cases coming under my observation at the base hospital were more than two weeks old, the average length of stay in the evacuation hospital being sixteen days.

TWO GROUPS OF CASES: STERILE AND INFECTED

Routine examination and several days' observation of these twenty-five cases made it possible to divide them readily into two groups:

Group 1 is made up of those cases, eleven in number, in which patients had suffered perforating machine-gun bullet wounds or less severe tangential wounds, and who had no symptoms with the exception of slight dyspnea on exertion and practically negative physical and roentgenographic findings.

Group 2, comprising also eleven in number, consists of those patients who had suspicious symptoms and definite physical findings both clinical and roentgenographic.

Those belonging to the first group were evacuated in two or three weeks. The second group comprised the hemothoraces.

Hemothorax occurs in 80 per cent. of gunshot wounds of the chest, and is due to hemorrhage into the pleural cavity from lacerated lung tissue and occasionally from injured intercostal vessels. It is usually observed on the third day after injury, and appears about the time that hemoptysis ceases. As for the symptoms resulting from this collection of blood, pain was practically negligible a few weeks following the injury, and complaint was made of only slight discomfort. Dyspnea depended on the extent of lung collapse and the amount of fluid present. While lying quietly no dyspnea was experienced in any of the aseptic cases I observed, but slight exertion, such as getting out of bed or walking a few steps, caused some distress. Cough and expectoration were very slight in cases of sterile hemothorax. Six sterile cases showed an average evening temperature of 99.4 over a period of ten days. This temperature was regular and constant and not variable as in the infected type. The pulse was usually accelerated, but not markedly. Respirations were slightly increased, ranging from 19 to 23, with slightly decreased excursion on the affected side. Gastro-intestinal disturbances were not present in any cases observed.

CASE OF HEMOTHORAX

E. E. D., Sgt. Co. A., 7th Engineers. Date injured, Sept. 31, 1918

Description of Wound	Machine-gun bullet, left chest, opposite fourth dorsal spine, exit second interspace, to left of midclavicular line. November 14: posterior wound healed; anterior wound almost healed
Immediate Symptoms	Pain left chest and shoulder; no hemoptysis, at present some shortage of breath, slight; was able to walk 300 yards to dressing station
Operation	Simple dressing; rest
Roentgen Findings	Left lung: in its inferior half casts a dense shadow, probably due to presence of fluid. The costophrenic angle is obliterated. Fluoroscopy shows density "2"; limiting level noted on sitting posture
Physical Findings	Right lung normal; right border of heart at right sternum; left border at midclavicle line. Heart sounds normal; left side is bulging, and moves very slightly. Interspaces in left side full; dulness seventh interspace, midaxillary line; normal lung above; fluid below; posterior dulness to seventh dorsal spine; all signs of fluid, and slight Grocco
Aspiration	Negative

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/14	98.0	88	20	White blood count, 11,120; polymorphonuclears, 70 per cent.; lymphocytes, 30 per cent.
11/22	98.6	84	20	
11/23	98.6	84	20	Slight dyspnea on mild exertion; no cough; no expectoration; appetite excellent; gaining in weight; urine normal
11/24	98.6	84	20	Evacuated to Class D. Temperature always normal. Condition excellent. Probably an organized blood clot left lower chest

The physical findings presented by these aseptic cases were thus recorded: As to general appearance, there was slight pallor, but no evidence of pronounced septic absorption. Respiratory excursion on the affected side was changed, and some retraction was present. There was deficient diaphragmatic movement on the affected side. The heart was displaced, the condition depending on the amount of fluid. Palpation showed the limited excursion and noted the decreased tactile fremitus. Percussion revealed flatness, but change in position of the patient did not always result in shifting of the area of dulness, owing probably to the different stages of organization of the blood clot and its comparative fixation in the pleural cavity. Auscultation gave conflicting and misleading information. As a rule, breath and voice sounds were diminished or lost, but sometimes, even in the presence of a large amount of fluid, all the signs of pulmonic consolidation may be present. This may be explained by the very frequent accompanying collapse of the lung, the presence of adhesions, and the varying stages of coagulation of the blood. Leukocyte counts in the aseptic cases averaged 11,000, with 72 per cent. polymorphonuclear leukocytes.

CASE OF HEMOTHORAX

R. E., Pvt. Co. E, 355th Infantry. Date injured, Nov. 4, 1918

Description of Wound	Gunshot wound, left chest, 5 by 3 inches; slight suppuration; shrapnel; nonpenetrating; entrance in postaxillary *line in sixth interspace*
Immediate Symptoms	Walked about 50 yards and then fainted; marked shortness of breath; some expectoration of blood
Operation	Débridement of external wound; foreign body removed from deep muscles of back
Physical Findings	Heart: apex beat fifth insterspace one half inch inside nipple line; heart sounds normal; respiratory excursion left side, right side normal; left chest area of hyperresonance in fourth and fifth interspaces in anterior axillary line; dulness posteriorly; tactile fremitus decreased; vocal fremitus normal; breath sounds slightly decreased posteriorly
Roentgen Findings	The heart is somewhat enlarged; left lung casts a dense shadow of increased density which may be due to the presence of a thickened pleura or fluid
Aspiration	Not indicated

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/12	98.6	78	21	White blood count, 11,280; polymorphonuclears, 78 per cent.; lymphocytes, 22 per cent.
11/13	98.6	72	20	
11/14	98.8	70	20	
11/15	98.6	70	20	No cough; no dyspnea; general condition excellent
11/18	98.0	72	20	Wounds healing satisfactorily
11/19	98.4	72	21	Urine normal
11/22	*98.6*	*80*	21	*Temperature always normal*
11/24	98.6	..	..	Evacuated to Class D; condition excellent

All these cases were subjected to aspiration and studied fluoroscopically, but I wish to include these observations under differential diagnosis between the sterile hemothorax and the infected hemothorax.

Referring again to the twenty-five recorded cases, I wish to recall that three were draining empyemas when they reached the base hosital center. Two cases belonged to Group 1, having no symptoms and comparatively no physical findings. Group 2 comprised the hemothoraces, and of these six were aseptic cases, leaving five for the infected type.

Symptomatically, these infected cases differed thus from the sterile cases: Pain was very severe, whereas in the aseptic type it is negligible. Dyspnea was very marked, the distress being striking even with the patient lying quietly. Cough and expectoration were moderate in amount, usually occurring at night. The temperature usually ranged from 100 to 103, with very irregular excursions, whereas the temperature in the sterile cases was uniform from day to day until normal was reached. The pulse was rapid in all cases, varying from 110 to 120, and was somewhat irregular. Respiration increased, and ranged from 24 to 28. The gastro-intestinal disturbances that usually accompany any septic absorption were present. Among nervous manifestations, sleeplessness was rather characteristic.

The physical findings differentiating the two conditions may be thus described: In the general appearance, pallor was marked; cyanosis of the lips was noticeable; also an anxious expression and rapid loss of weight were all striking. The chest was practically immobile, with no diaphragmatic excursion, while the interspaces were bulging. In one case a definite pulsating upper chest was noted simulating a pulsating area. Heart displacement rapidly increased. In one case the cardiac impulse was best seen in the sixth right interspace beyond the nipple line. Gallop rhythm was also noticed in one case, and this disappeared after the evacuation of 1,700 c.c. of fluid. By palpation, in addition to noting the decreased tactile fremitus and excursion, we also found increased tenderness and hyperesthesia of the skin on the affected side. Percussion gave a cracked note resonance in most cases, and was due to the presence of air generated by the infecting organisms. Auscultation revealed the conditions previously noted in the sterile cases, and in addition we also heard splashing and gurgling characteristic of the mixing of air and fluid. The leukocyte count in these infected cases averaged 16,000, with 80 per cent. polymorphonuclears.

CASE OF HEMOTHORAX

A. I., Pvt. Co. A, 9th Infantry. Date injured, Nov. 4, 1918

Description of Wound	Machine-gun bullet; wound of entrance, neck, left side, posterior border of *sternocleidomastoid* muscle; exit, fourth interspace, right midaxillary line
Immediate Symptoms	Severe pain right chest and neck; unable to rise; very slight shortness of breath; slightly blood-tinged sputum *for two days after injury*
Operation	*November 5, aspiration 300 c.c.;* blood culture negative
Physical Findings	Heart: apex beat fifth interspace inside nipple line; heart sounds normal; respiratory excursion *markedly* decreased right chest; diaphragmatic excursion barely perceptible; left chest normal; impaired resonance right upper lobe down to third rib; dulness from fourth rib in nipple line downward *and backward; tactile and* vocal fremitus present; breath sounds decreased; friction rub over middle and lower lobes in midaxillary line and posteriorly; slight Grocco sign; slight compression of right lung; *probably small clot in pleura*
Roentgen Findings	Right chest, small metallic fragment on level of sixth rib; costophrenic angle obliterated, probably owing to presence of fluid; fracture second rib posterior *aspect near median line*
Aspiration	Not indicated

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/25	98.0	72	20	White blood count, 13,200; polymorphonuclears, 67 per cent.; lymphocytes, 33 per cent. Temperature normal. Severe pain right upper *arm, inner* side; *nerve* of Risberg. Very slight dyspnea on exertion. Pain in right upper arm subsiding. Appetite good. Condition good. Gaining in weight. Evidence of increasing lung expansion. Fluid probably resorbing
11/26	98.6	70	19	
11/27	98.6	72	20	
11/28	98.4	70	19	
11/29	98.6	64	19	
12/ 1	98.4	70	18	
12/ 2	98.6	80	20	
12/ 3	98.4	82	20	
12/ 4	98.4	72	19	
12/ 6	98.0	70	20	

This wide variance in symptomatology between the aseptic and the septic cases is not always so *striking* and conclusive, many of the cases being borderline problems which require closer study and the application of instruments of precision afforded us by the laboratory and the roentgenologist.

TYPES OF FLUID AS SHOWN BY ASPIRATION

A differential diagnosis is never complete without determining the character of the fluid by aspiration.

In all eleven cases in both groups exhibiting evidences of fluid, aspiration was done. Gross examination of the aspirated fluid gives reliable diagnostic information, and three distinct types of fluid were noted.

CASE OF HEMOTHORAX

E. H., Pvt. Co. F, 102d Infantry. Date injured, Oct. 28, 1918

Description of Wound	Shrapnel perforating left upper chest; wound of entrance in second interspace at middle third of left clavicle; exit opposite fourth and fifth dorsal vertebra; sucking wound
Immediate Symptoms	Did not fall to ground; walked 20 feet and sat down on account of weakness and dizziness; had no dyspnea; did not expectorate blood
Operation	Débridement of muscles of back; suture of big muscles to close sucking wound
Roentgen Findings	Evidence of foreign body, 10 by 7 mm., on level of eighth dorsal vertebra, 4 cm. to the right at median line; left chest casts a dense shadow, probably due to hemothorax; heart markedly displaced to right side. Fluoroscopic examination shows pulsating right heart in right axillary region; fluid, large amount left chest
Physical Findings	Left chest bulging; interspaces bulging; no excursion of left chest; no diaphragmatic movement; heart impulse in fifth interspace in right nipple line; right border of heart beyond right nipple line; tactile and vocal fremitus lost, left chest; dulness up to second interspace, anteriorly and posteriorly; no breath or voice sounds audible
Aspirations	November 29, 700 c.c. port-wine colored fluid; smear shows many polymorphonuclears and gram-positive bacilli and diplococci in chains. December 2, 3,000 c.c. chocolate-colored fluid; polymorphonuclears, 10 per cent.; lymphocytes, 60 per cent.

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/28	99.0			
	100.4	98	24	
11/29	99.0	98	24	White blood count, 10,520; polymorphonuclears, 78 per cent.; lymphocytes, 22 per cent. Dyspnea marked. Sleeplessness. Marked pallor Loss of weight marked
	101.0	106	26	
11/30	100.0	100	26	Operation; rib resection; 100 c.c. chocolate-colored fluid
	101.6	112	28	
11/31	100.0	98	26	
	102.0	102	29	
12/ 2	99.0	100	30	
	103.0	116	28	
12/ 3	99.0	100	26	Heart now approaches right border of sternum
	101.6	114	28	
12/ 4	100.0	98	26	
	102.0	112	30	
12/ 5	99.0	100	28	Dyspnea relieved; draining freely
	101.6	116	28	
12/ 6	98.8	98	24	Condition improving
	101.0	100	26	
12/ 7	98.8	90	24	Appetite good
	99.8	98	24	
12/ 8	99.0	92	24	Gaining in weight
	99.0	94		
12/10	99.0	80	20	Heart in normal position
12/11	98.6	90	20	Discharge lessening
	99.4	96	22	
12/14	98.8	90	20	Evidence of some lung expansion
12/16	98.6	86	20	
	98.8	86	20	
12/18	98.8	84	20	

Type 1.—A clear, thin, pinkish red, slowly coagulating fluid was found in four of the sterile cases. The slow coagulation time and the color of the fluid are probably due to the interference with clotting by the respiratory movements, which throw out the fibrin and cause the serum to retain the red cells. Microscopically, disintegrating red cells and occasional polymorphonuclears were found and no bacteria.

Type 2.—A rather dark, somewhat cloudy red fluid resembling port wine was found. Cellular examination showed many polymorphonuclears, lymphocytes and red cells in various stages of disintegration. This type of fluid was found in two cases in which subsequently drainage was done, so it is to be regarded as extremely suspicious even though the culture is negative.

Type 3.—A thick, chocolate-colored fluid was found in three cases at first aspiration, and also found in the two cases above mentioned on subsequent aspiration. The cellular examination in these cases showed a high percentage of polymorphonuclears, and the culture in every case showed gram-positive bacilli and diplococci.

VALUE OF THE FLUOROSCOPE

In conjunction with aspiration I found the fluoroscope an invaluable aid. Previous to an attempted thoracentesis, every chest was observed fluoroscopically, and information on the following matters was obtained:

1. Absence of respiratory excursion on the affected side.

2. Displacement of the heart.

3. Decreased movement and sometimes complete immobility of the diaphragm, which is probably a protective reflex fixation with a temporary partial paralysis.

4. High riding diaphragmatic dome, which can also be attributed to the foregoing mechanism. This is invaluable information preceding a chest puncture, because it gives warning of the danger of a low puncture or resection with consequent injury to abdominal viscera.

5. Amount of fluid present. With the patient in the recumbent position, the disseminated fluid gives a hazy appearance to the entire side of the chest; but in the sitting posture, a moderate opacity can be defined and a limiting level noted.

CASE OF HEMOTHORAX

L. D. H., Pvt. Co. G., 322d Infantry. Date injured, Nov. 11, 1918

Description of Wound	Shrapnel wounds, multiple: (1) wound of entrance at spine of right scapula; (2) posterior aspect right shoulder; (3) seventh interspace posterior axillary line; no wounds of exit
Immediate Symptoms	Walked three miles; did not expectorate blood
Operation	November 11, simple dressing; rest. November 25, rib resection eighth posterior axillary line; 1,000 c.c., slightly offensive, thick, chocolate colored
Roentgen Findings	Fracture in the fifth rib; metallic fragment, 7 by 5 mm., just above this region; right costophrenic angle is obliterated, probably owing to fluid; a second metallic fragment, 12 by 5 mm., lies on the level of the second lumbar vertebra
Physical Findings	Heart gallop, rhythm slight, reduplication of second mitral; friction rub in second and third left interspaces, right chest; limited excursion of right chest
Aspiration	November 22, chocolate colored, 35 c.c.; culture shows large gram-positive bacilli and diplococci in chains; smear shows many bacilli and leukocytes

Clinical Course				Remarks
Date	Temp.	Pulse	Resp.	
11/19	101.4	112	24	White blood count, 31,200; polymorphonuclears. 80 per cent.; lymphocytes, 20 per cent.
	98.0	120	24	
11/20	100.0	112	26	
	99.8	108	26	
11/21	102.0	100	24	
	98.4	88	24	
11/22	99.0	92	24	Operation: rib resection
	101.6	98	26	
11/23	100.0	92	24	
	101.4	108	27	
11/24	101.0	90	22	
	103.0	114	28	
11/25	100.2	90	22	
	101.4	106	27	
11/26	99.8	90	23	
	101.4	106	27	
11/27	98.8	96	24	Temperature normal; golden-yellow discharge, not bile
	101.9	106	26	
11/28	99.0	96	24	
	100.0	100	24	
11/30	98.8	90	24	
	100.4	99		
11/31	98.0	80	24	
	99.0	99		
12/ 2	99.0	90	22	
		90		
12/ 4	99.0	82	22	
	100.0	90		
12/ 6	98.8	82	22	
	99.8	88		
12/ 8	98.0	86	22	

6. Presence of shadows. The character of the fluid, of course, cannot be determined; but one case that gave two negative aspirations showed fluoroscopically the presence of a shadow with the density of liver substance. This patient had a chill and rise of tem-

perature after each chest puncture, and ran a septic course for four days. The only explanation I can offer is readily afforded by the fluoroscope, which revealed a dense shadow that could be interpreted as a firmly organized blood clot. The symptoms were probably due to the liberation of more blood by disturbing the blood clot.

7. Presence of air, which is manifest by the appearance of eddies, whirls and bubbles. Combined with clinical signs of infection, the presence of air gives presumptive evidence of the presence of infection.

8. Localization of foreign body to determine its position with a view to removing it, if accessible.

Roentgenograms were taken in all cases, and are valuable aids in determining abscess formation, lung collapse and other complications, and are also valuable as permanent records.

BASIS FOR DIFFERENTIAL DIAGNOSIS BETWEEN ASEPTIC AND SEPTIC HEMOTHORAX

Differential diagnosis between aseptic and septic hemothorax is based on these findings:

1. The aggravation of all symptoms due to the presence of blood in the pleural cavity.
2. Increase in all the physical findings.
3. Presence of a pneumohemothorax where no air had been previously noted.
4. Gross characteristics of the aspirated fluid, the chocolate-colored fluid being diagnostic of infection.
5. Cellular examination of the aspirated fluid.
6. Positive culture of aspirated fluid.
7. Leukocytosis.

COMPLICATIONS

Two patients were suspected of having abscess of the lung. One patient presenting evidence of only a slight amount of fluid in the costophrenic angle, but with a leukocyte count of 17,000 and evidence of septic absorption, expectorated 500 c.c. of pus in twelve hours and the symptoms subsided, the white count dropping to 9,000 in four days. This patient also showed deep in the thorax a machine-gun bullet which moved up and down with the respiratory movement and laterally synchronously with cardiac action. In the other case, the initial aspiration revealed pure pus, a subsequent one chocolate-colored fluid. Two weeks after rib resection was done, a foul odor was noted in the draining empyema. A culture showed the same organism found on first aspiration. The probable explanation is that it was due to an externally rupturing lung abscess.

TREATMENT

Five of the patients proving to be of the infected type were operated on under local anesthesia, a rib resection being done and two drainage tubes introduced. Subsequent local treatment consisted in maintaining free drainage. In one case that was draining poorly a water pump suction apparatus was used and proved successful. In twenty-four hours 300 c.c. of fluid were collected.

General treatment consisted in giving large quantities of highly nutritious food. No facilities were available for determining nitrogen waste in the discharge. This nitrogen waste can be neutralized by selecting a diet rich in proteins, thereby replacing the lost nitrogen.

The main consideration in treating these cases is the restoration of normal lung function. Much can be accomplished toward this end by stimulating lung expansion through the means of blow-bottles and mild exercises. These facilitate the evacuation of pus, discourage the formation of new adhesions, and help to destroy the old ones. They also enable the collapsed lung to return, at least partially, to its former state of respiratory activity.

SUMMARY

In the present war, gunshot wounds of the chest are frequent and severe, but the advance in thoracic surgery has made possible a comparatively low mortality rate.

2. Hemothorax is the most common complication of the chest injuries.

3. An early differential diagnosis between sterile and infected hemothorax is essential.

4. A practically absolute diagnostic evidence is afforded by the gross, microscopic and cultural characteristics of the aspirated fluid.

5. Fluoroscopic examination in all cases is important.

6. Prompt drainage of these infected hemothoraces should be followed by an after-treatment that encourages the restoration of respiratory activity on the affected side.

EMPYEMA AT CAMP MILLS, L. I.

WITH SPECIAL REFERENCE TO THE USE OF THE PHILIPS EMPYEMA APPARATUS

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WITH COMMENT ON THE APPARATUS BY

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The successful treatment of empyema depends on the recognition of the basic pathology of the condition. In the treatment of a collection of pus elsewhere in the body, simple incision and the establishment and maintenance of adequate drainage suffices in most cases to effect a cure. But in the chest cavity a different condition exists. When the pleural sac is opened for the drainage of pus, the normal negative pressure is immediately changed to atmospheric pressure (15 pounds to the square inch), the elastic lung collapses, the respiratory and circulatory embarrassment of the patient is increased instead of lessened, and a condition results which is the very thing to be avoided. To put it in the simplest form, it is adding a complication instead of ameliorating or aiding the condition. The indications for the most successful treatment of this condition are obvious: the establishment of adequate drainage coincident with the exclusion of atmospheric pressure.

In a previous preliminary report,[1] the efficacy of a new method for the treatment of empyema, with detailed histories of three cases so treated, was indicated. A brief summary of this report, including a short description of the apparatus, forms an appropriate introduction to this paper.

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[1] Philips, H. B.: New Method of Continuous Drainage for Empyema, Surg., Gynec. & Obst. 24: 236 (Feb.) 1917.

The apparatus consists of a special cannula, a bottle, a negative pressure manometer, a suction pump, and connecting rubber tubing. The cannula is of special design so as to be used for a trocar cannula for the thoracotomy, and being also nonobstructible, it remains in the chest wall until the empyema sac has been obliterated. A rubber suction cup surrounds the cannula, and permits of an absolutely air-tight connection with the pleural sac. This makes it possible to empty the pleural sac with nonobstructible drainage, maintaining a continuous negative pressure of from 30 to 60 mm. of mercury until the empyema sac has been obliterated and firm adhesions have formed between the visceral and parietal pleurae, when the apparatus may be removed.

The advantages anticipated and found with this method of treatment were numerous. The control over the negative pressure throughout the treatment assured against primary collapse of the lung and its coincident grave dangers. There was not the slightest suggestion of respiratory embarrassment. A means was afforded for keeping the lung expanded automatically and continuously, thus promoting early adhesions between the pleurae, and preventing the formation of a dead space. The nonobstructible cannula, which is a trocar cannula, convertible into a cannula with a hidden curet, assured ample drainage and obviated rib resection and other operative procedures. The original dressing was the only one, so that secondary infection from extraneous sources was excluded. Moreover, the mussy, obnoxious dressings with which we are all familiar were done away with, all the pus accumulating in the bottles (in one case 11 liters [quarts]). The duration of the treatment was very materially reduced and a method afforded which was sanitary, pleasing and simple.

Having thus described the features of the apparatus and what it accomplished in the first short series of cases, we shall further refer to it in describing the complete course of treatments followed in a series of about fifty cases that occurred at this post during the influenza epidemic. Mention should be made of the fact that but one apparatus was available during the height of the epidemic, and it was only at the end of the series that enough apparatus were on hand to meet the demand, so that it was necessary to resort to varied treatments, which, however, were all consistently conservative.

The plan of treatment that was followed before the apparatus arrived, and while there was but one in use, was to make repeated aspirations with aseptic technic, trying as far as was possible to exclude atmospheric air from the pleural sac during the puncture. This was repeated from time to time in all cases advisable. It was found, however, that in several of the cases the pus was so thick as to make this procedure impossible. These cases were then submitted to either intercostal drainage or rib-resection operations. In the absence of Philips' apparatus, cannulas, firsf of rubber and then of metal, were used, in an attempt to make suction through intercostal drainage and to exclude atmospheric pressure. A special adhesive paste, referred to later, was used to make the cannula air tight in the chest wall. The cannula was then connected to an air-tight stoppered bottle, and in this way it was attempted to maintain a continuous negative pressure while draining the pleura. Owing, however, either to the obstruction of the improvised cannulas or to leakage, this method was soon abandoned, and thereafter all cases which did not improve after aspirations were submitted to rib-resection operations for drainage. Finally, with the arrival of the apparatus, all remaining cases were treated solely with them, so that an unusually good opportunity is offered for a comparative study of these methods, checked up by very frequent roentgenographic examinations. It should be mentioned that neutral solution of chlorinated soda (Dakin's solution) was used as a routine for repeated and regular irrigations of those cases treated by intercostal and rib-resection drainage.

For a clear consideration of these cases, it is necessary to divide them into the following groups for study:

1. Those treated by simple repeated aspirations.
2. Those treated by intercostal drainage.
3. Those treated by rib-resection drainage.
4. Those treated with the Philips apparatus.

1. CASES TREATED BY SIMPLE REPEATED ASPIRATIONS

Simple repeated aspirations were employed as a matter of routine when consistent with the condition of the patient. The aspirations were done at three to seven day intervals, whenever the condition of the patient indicated this procedure. In the great majority of cases this method failed, and more radical treatment had to be instituted early. Of a group of seventeen cases, three terminated successfully without any treatment but repeated aspirations. In most cases, however, early symptoms of aggravated sepsis or the appearance of a pneumothorax, although persistent care was taken to prevent this complication, indicated better drainage methods. Of the three cured cases, the exudate in one was serous and in the other two it was purulent. Two of the cases terminated fatally. There was no characteristic bacteriology that permits of any inference as to the cause of the fatality; however, both patients were extremely toxic.

One must keep in mind that cures with this method of treatment are the exception and not the rule, and that the personal equation of the patient, and the exceptional pathology of the condition, make this unusual termination of the condition possible. In this group of cases it was found impossible to exclude air from the pleural sac uniformly. Even when the aspirations were thought to have been accomplished without the entrance of air into the pleura, roentgenoscopy would disclose a pneumothorax in the greater number of cases. In many cases this method was a failure from the very start, because of the thick character of the pus, which plugged the needle or cannula immediately after its insertion. The Potain aspirator was used, as were also small trocar cannulas, which were connected tightly to bottles and suction pumps in attempts to aspirate the pus and at the same time to prevent pneumothoraces. Owing to either plugging of the drainage or to leaking, these methods were soon abandoned.

Our experience has led us to feel that the contraindications for repeated aspirations are:

1. The character of the exudate such that it obstructs the cannula or needle.
2. Absence of improvement following this treatment.
3. The appearance of a complicating pneumothorax, following aspirations.
4. Severe toxemia of the patient.

empyema sac is completely obliterated. A constant feature is the remarkable ease and comfort of the patient when the drainage is started, and during the course of the application of the apparatus. This subjective well being is decidedly conspicuous by its absence in other methods of drainage. An extremely unusual subjective and objective improvement in the condition of the patient is invariably present. Cyanosis and dyspnea disappear almost from the start, and do not return. This has been nothing short of phenomenal in cases of pyopneumothorax, when it appears to pull the patient from a yawning grave within several minutes, whereas other methods of treatment aggravate the symptoms and condition, and contribute to the mortality. Checking up these cases very closely with roentgenograms has shown that the apparatus gradually expands the lung to its full capacity, and keeps it fully expanded until adhesions between the pleurae are firm and the apparatus can be removed and the cannula tract drained.

2. The necessity for operation is done away with entirely. The special cannula is constructed with a special device which enables the operator to use it first as a trocar cannula to do the thoracotomy through an intercostal space. The cannula stays in situ in the chest wall during the entire treatment, and does not have to be removed if it should become obstructed. By a slight manipulation, the original trocar blade which projected from the cannula can be changed to a curet, so that the operator is able to cleanse the cannula without removing it from the chest wall. This gives a practically nonobstructible drainage through an intercostal space, and does away with the necessity for rib resections. The insertion through the chest wall can be done absolutely painlessly, with the use of a local anesthetic. A general anesthetic is unnecessary. The apparatus has been applied repeatedly without the slightest pain or apprehension on the part of the patient.

3. Secondary infection is excluded. The cannula is fastened to the chest wall by a suction cup device, adhesive straps and gauze, with a liberal application in layers of a special adhesive paste made of common glue, 50 parts; water, 50; thymol, 2; glycerin, 2, and calcium chlorid, 2. This makes an air tight and permanent dressing which will stay absolutely clean and air tight as long as two weeks. Consequently there is no portal of infection from extraneous sources. Numerous cases have been checked up bacteriologically, and secondary infection has been found to be excluded. The value of this feature cannot be overestimated, for it has long been agreed that one of the principal factors contributing to the high mortality of empyema is secondary infection.

4. The duration both of the treatment and of the condition is very materially shortened. The exclusion of atmospheric pressure and of secondary infection precludes the formation of a large dead space, secreting endless pus. It is this condition that all surgeons and practitioners dread, for with its establishment a chronic, long drawn out condition is guaranteed. This method, applied as early as possible, can justifiably be considered an absolute prophylactic to a chronic long standing empyema, which in the end will necessitate a very radical rib-resection operation to obliterate the dead space. The average duration of the actual empyema has been less than ten days after the application of the apparatus, and when it is removed, it will leave a completely or very nearly completely expanded and adherent lung.

5. A functionating lung is obtained from the very start. More accurately as checked up by the roentgen ray, a completely or very nearly completely expanded lung is present and functionating within a few hours after the application of the apparatus, and this can be demonstrated clinically and by roentgenoscopy any time thereafter. This feature is certainly conspicuous by its absence in other methods of treatment which permit the entrance of air into the pleural space, even if but temporarily. Needless to say, the additional advantages to the patient of a functionating lung, when the opposite side has been incapacitated by a pneumonia, is tremendous, and a few patients were unquestionably saved and others very materially improved by the rapid restoration of a functionating lung. This is confirmed in a way by the experience of the roentgenologist. In making the long exposures necessary with the bedside roentgen apparatus (no intensifying screens being available), just prior to the application of the apparatus, it was necessary to make three interrupted exposures to get a negative. Roentgenograms made within three hours after the apparatus was applied were taken very easily, the patient holding his breath the necessary nine or ten seconds without any interruption.

6. A clean, sanitary, pleasing, economical and simple method is secured of getting rid of the pus. During the entire application of the apparatus, the dressings remain as perfectly clean as when originally applied. The adhesive paste interspersed between the layers of the dressings makes an ideal air-tight dressing which does not leak. The usual mussy, obnoxious dressings that are always associated with empyema cases are entirely done away with, all the pus being accumulated in the bottle, which itself is sealed air-tight. The foul odors, pussy dressings, pain and discomfort to the patient, not to dwell too forcibly on the objections of drainage operations, with the squirting and sputtering of pus all over the operating room, the acute torture and the alarm of the patient when his pleural sac is opened—these features, without exception, are all relegated to the past. One visitor, after looking over an array of six cases being treated with the apparatus, after inspecting the perfectly clean dressings (some of which had been on over a week), and the bottles at the bedsides filled or partially filled with pus, noting the ease and comfort of the patients and the absence of odors, remarked that the place looked like anything but an empyema ward. It is undoubtedly of interest to note that as much as 10 liters of pus have accumulated in the bottles of individual cases, still preserving the physical appearance just described.

Attention should be called to the fact that the apparatus can be used in ordinary serous pleural effusions, and has been used with great success. The danger of secondary infection is minimal, and the means afforded of expanding a chronically compressed and collapsed lung, by the apparatus, cannot be overlooked.

GENERAL CONCLUSIONS

1. Repeated aspiration as a curative procedure is not feasible in most cases. As a palliative procedure it permits of the formation of a pneumothorax in most cases, and its value is therefore questionable. Severe toxemia is a contraindication to repeated aspiration treatment.

2. Intercostal drainage is impossible, in our experience, without the production of a complicating pneumothorax; and as it possesses the disadvantages without the advantages afforded by rib resection, we feel that the latter is the operation of choice if the apparatus is not available.

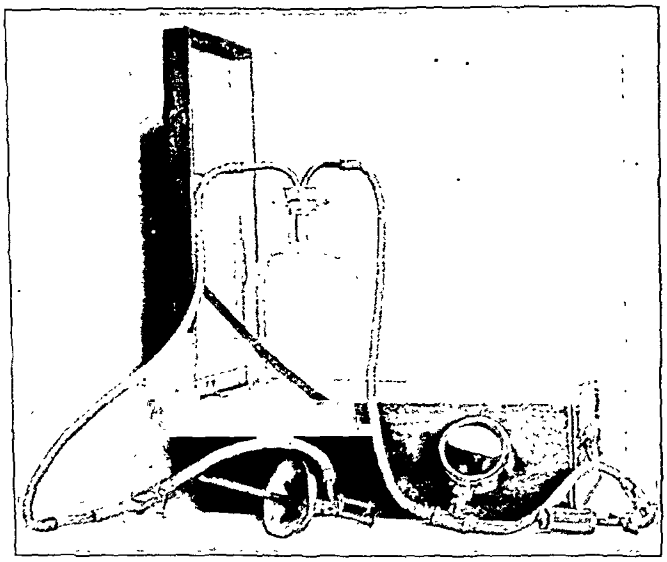
3. Shock and cardiac and respiratory embarrassment are minimized with the use of the apparatus.

4. The apparatus affords the most desirable method of treatment in any stage of the empyema because: (*a*) There is exclusion of atmospheric pressure; (*b*) secondary infection is excluded; (*c*) the necessity for operation is done away with entirely; (*d*) the duration both of the condition and the treatment are very materially shortened, and (*e*) it is a clean, simple, sanitary and economical method of getting rid of the pus.

5. Open pneumothorax is absolutely prevented by the use of the apparatus.

COMMENT ON PHILIPS' APPARATUS FOR THE TREATMENT OF EMPYEMA, BY DR. MIX

In civil practice the treatment of empyema has always been in the main simple. Intractable cases were occasionally encountered which demanded special measures, but as a rule case after case yielded to the simple operation of rib resection. The stubborn cases were usually passed along to some surgeon who instituted special measures for continuous drainage, and ultimately most patients recovered.



Completely assembled apparatus with curet projecting from cannula orifice.

In army practice, the treatment of empyema has been almost futile. *Streptococcus hemolyticus* seemed to be the active germ in most cases, and its virulence in some cantonments has been prodigious. Methods in vogue in civil practice were totally inadequate. At first, camp surgeons resected ribs as soon as an internist discovered pus, and the patient died. Then the internist began to hold back his cases from the surgeons because he found that repeated aspirations gave better results. Throughout all the struggle to succeed against empyema ravages, every one knew that the principle to be sought after was a continuous drainage, with a negative pressure in the pleural cavity.

TABLE 1.—RELATIVE EFFECTIVENESS OF THREE METHODS OF TREATMENT

	Intercostal Drainage	Rib-Resection Drainage	Philips' Apparatus
Days to produce a completely expanded lung..	50 days	40 days	3 days
Average day of complete stoppage of drainage in two cured cases of each group	42d day	28th day	15th day
Percentage mortality encountered in cases of straightforward empyema (no coincident active pneumonia being present)	30	9	0

At the base hospital at Camp Mills, our empyema experience was similar to that elsewhere. The cases in the spring of 1918 showed a mortality of 55.5 per cent., which was neither good nor bad as compared with statistics from other cantonments. All of these cases were treated by the surgical department, after the diagnosis had been made in the medical department. Those that recovered drained for sixty days in some instances, some patients being discharged in July who had entered in April.

TABLE 2.—EARLY INCIDENCE OF EMPYEMA

Date	Influenza Patients Admitted	Patients Developing Pneumonia	Patients Developing Empyema
Sept. 14	5	1	0
Sept. 15	6	0	0
Sept. 16	3	1	0
Sept. 17	9	2	0
Sept. 18	8	1	0
Sept. 19	20	2	0
Sept. 20	67	3	2

When the first cases of influenza appeared, Sept. 14, 1918, we did not look for much empyema as a complication of the disease, and it was some time before our first case appeared. Our early incidence of influenza was interesting, and is briefly presented in Table 2.

The rapid rise in cases is shown, also the early development of pneumonia and the later development of empyema. Of the ten cases of pneumonia subsequently developing among those admitted during the first week of the epidemic, in two later, during October, empyema developed. Since three of the first ten pneumonia patients died, really the incidence of empyema was two in seven cases.

With admissions rapidly rising, so that we had 3,000 cases under treatment by the middle of October, it was not strange that many later showed signs of empyema. Lieutenant Philips told me of his apparatus, the mechanical details of which were simple, the main thing being a cannula with a sliding curet, and a sliding trocar within it. One or the other could be slipped down at will, the trocar for purposes of inserting the cannula, and the curet for slipping up and down to clean the cannula whenever it happened to be clogged with thick pus. The ideal thing about the apparatus, however, was that it was applied by a glue preparation in an airtight condition to the chest wall and held rigidly in place for days while connected with a Potain aspirator bottle in which a measured negative pressure could be maintained. If the pleural cavity could be thus sucked continuously dry of pus by an apparatus preventing the admission of air into the pleural cavity, so that the lung could be continuously expanded, certainly the ideal treatment would be attained. This the apparatus does. As the pus is sucked out 1 c.c. at a time, the lung expands that 1 c.c., and thus in time the lung is expanded completely.

Those conversant with empyema know that pneumothorax has hitherto been the invariable sequel of every method of treatment except that of occasional and very careful aspiration, such as is practiced in the removal of ordinary pleural effusions. And, indeed, even in many cases of simple and repeated aspiration, the air gets in. Philips' apparatus prevents the development of pneumothorax by way of the external thoracic wall. This is its great advantage.

We now have sixteen such apparatus at our disposal, and our statistics in empyema are improving. In the preceding, Lieutenants Philips and Langmann have set forth the material advantages of this treatment. I might emphasize the principal features: It expands the lungs. It prevents the formation of a pneumothorax by the admission into the pleural cavity of air from without. It provides continuous drainage every hour, minute and second, day and night. It lessens mortality and shortens convalescence. It prevents secondary infection. It is clean, comfortable and sanitary. All the pus is in a bottle, where it can only be seen, not smelled, and where it is harmless. It makes unnecessary an operation (rib resection with the sudden gushing out of a quart or more of pus all over the operating table, dressings and floor) attended with a high degree of shock. It helps to prevent toxic absorption. It leads to very early functioning of an otherwise crowded and crumpled lung.

Too much cannot be expected of the apparatus, but if it merely lessens the mortality of empyema, it is valuable. It cannot prevent the formation of a pneumothorax from within, of course. If, as not infrequently happens, air leaks into the pleural cavity from a bronchus, the apparatus can do no good. It is found wanting, because it is then not possible to exert a negative pressure in such a thoracic cavity. As soon as the apparatus is applied to such a chest, it will suck air through lung bronchus and pleural cavity, as soon as any attempt to make negative pressure is made. But the apparatus has already shown me that most of the pneumothoraces found in empyema are made by treatment and not by ruptured bronchi. Hence not many such cases will be found where the apparatus cannot be applied.

Furthermore, the apparatus cannot prevent the intoxication of the patient by absorption. Some cases of *Streptococcus hemolyticus* infection rapidly become so extremely septic that, before drainage can be instituted, the patients have already absorbed a lethal dose of toxin. It is a mistake to conclude that all patients can be cured by immediate and continuous drainage. Philips' apparatus cannot keep these patients from dying.

For all other cases, however, except these two groups of pneumothorax from within and of extreme sepsis, the apparatus will not be found wanting. It will save many patients who might otherwise die. If it can reduce mortality from empyema by only a few per cent., it is well worth while.

1945 Seventh Avenue.

SEPTIC ARTHRITIS OF THE KNEE ACCOMPANYING FRACTURE OF THE PATELLA

CURE OF A CASE BY IRRIGATION OF JOINT AND STAINING WITH GENTIAN VIOLET

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Since the publication of an article on the "Treatment of Acute Infections of the Joint by Lavage and Direct Medication,"[1] an opportunity has occurred in my service at the New Haven Hospital to make observations, which have amounted to a crucial experiment on a human being, as to the value of this method of treatment. The case was one of pyogenic arthritis, due to *Staphylococcus aureus,* and occurring as a complication of a compound comminuted fracture of the patella. As the boy was admitted to the hospital twenty days after his injury, at which time a purulent arthritis was well developed, and as there was in addition to the comminuted fracture of the patella a large gash below the knee-cap, which on admission had developed into an infected granulating wound, the test of this method of treatment could hardly have been more severe. The result, however, was a complete cure of the septic arthritis; and we were subsequently able to suture the fractured patella—which healed by first intention as though no infection had previously been present—and finally to give the patient a normal leg.

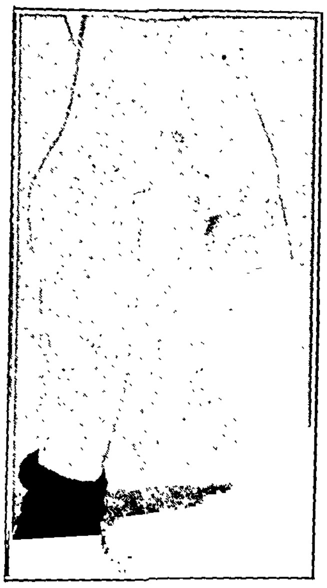

Fig. 1.—Condition of knee after cure of septic arthritis by means of lavage and staining with gentian violet; possibility of complete passive extension without pain; inability to lift foot from the bed (absence of active extension) on account of fracture of the patella.

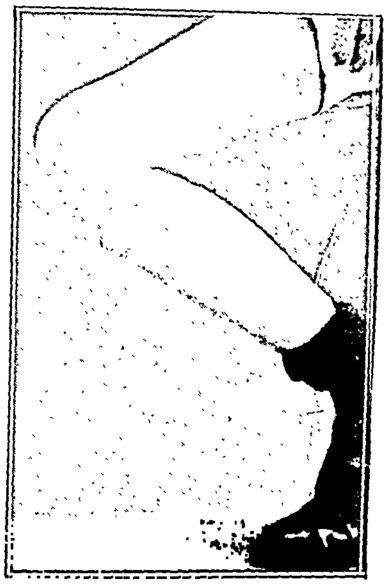

Fig. 2.—Degree of flexion present after cure of septic arthritis.

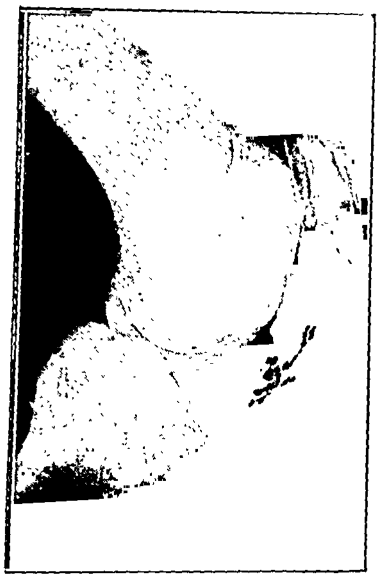

Fig. 3.—Comminuted fracture of patella.

The case was controlled by bacteriologic examinations throughout. The material aspirated from the joint on admission was a bloody pus, and smears from this pus contained a gram-positive coccus. *Staphylococcus aureus* grew out in pure culture. The occurrence of German measles after the first lavage and staining made it impossible to make subsequent bacteriologic observations until about a month had elapsed. At this time fluid was aspirated from the knee and was proved to be sterile, no organisms being found in the smear or on the plants. Meanwhile the incised wound below the patella was gradually cleaning up, and this was allowed to heal and become completely covered with epithelium before operative interference for the fracture of the patella could be thought of. For three days following this aspiration, the incised wound now having been closed for a week, the skin was prepared with benzin and iodin, and a week after aspiration, the joint was opened. It was found to be perfectly normal in appearance and contained the usual glairy synovial fluid, with the slightest possible bloody tinge. Both smears and culture from this fluid were negative. The comminuted fracture of the patella was treated by suturing the periosteal fascia. The knee was put up in a plaster cast and it healed in the usual way.

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[1] Churchman, J. W.: Treatment of Acute Infections of the Joint by Lavage and Direct Medication, J. A. M. A. **70**: 1047 (April 13) 1918.

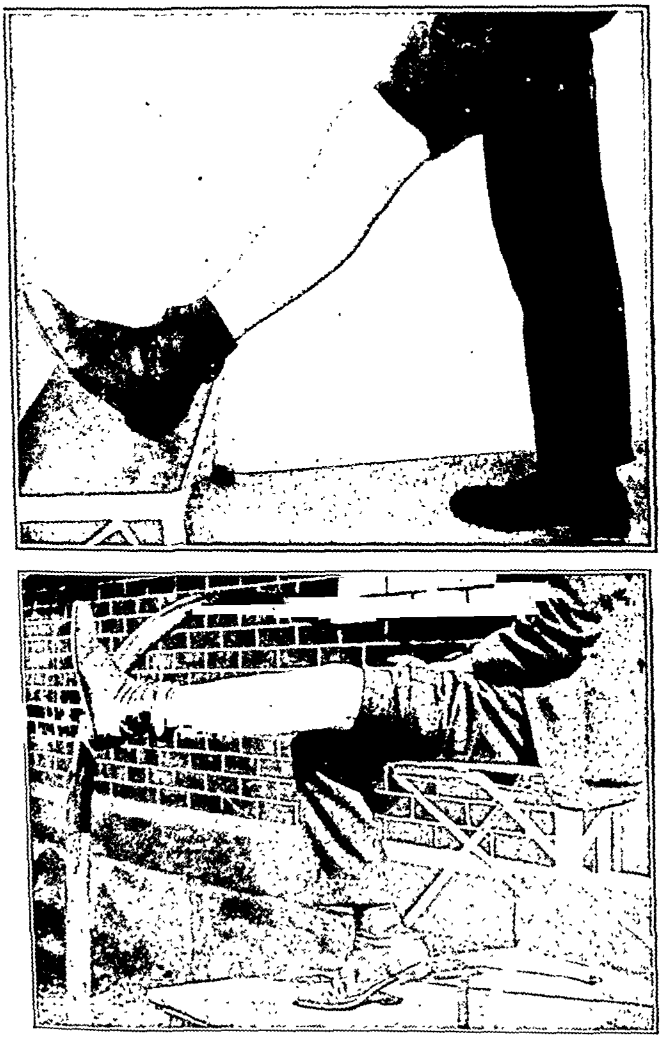

Fig. 4.—Result after suture of patella: active extension normal.

We thus had a septic arthritis, due to *Staphylococcus aureus*, cured by lavage and staining with gentian violet; and a granulating wound allowed to heal in the usual fashion. By means of bacteriologic studies we were able to demonstrate that the lavage and staining had sterilized the joint, and when the healing of the skin wound permitted, we felt safe in opening the joint and suturing the fracture. The bacteriologic studies of the fluid removed at the operation confirmed our opinion that the joint had been sterilized; and this opinion received final confirmation in the absolutely clean healing of the sutured patella and of the skin which followed.

In Figures 1 and 2 the condition of the knee is shown after the septic arthritis had been cured and the skin wound allowed to heal, but before the fractured patella had been sutured. It is to be noticed that at this time, though of course extension of the hanging lower leg was impossible on account of the fracture, the motions of the joint were entirely free from pain even in acute flexion, as shown in Figure 2. The comminution of the patella is shown in Figure 3, and in Figures 4 and 5 the result after suturing the patella. Extension is perfectly normal. Flexion is present to almost its normal degree.

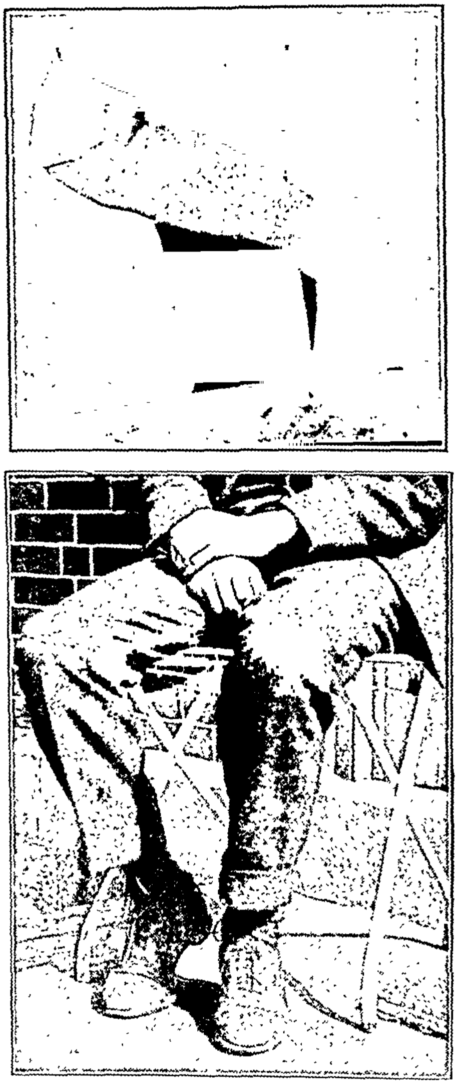

Fig. 5.—Result after suture of patella: active flexion practically normal.

In this patient I have had an opportunity for the first time to see the joint surface in a joint which has been the site of septic arthritis, treated in the manner recently suggested by me. My previous bacteriologic examinations had justified the supposition that by the method of lavage and staining a joint could be sterilized; and the clinical results already reported[1] made it likely that the joint surface, after an infection, when treated by lavage and staining, returns to normal condition. In this patient I was able by actual observation of the joint surface to show that both suppositions are correct. The fluid in this case at the time of operation on the patella was sterile and practically normal in appearance, and the joint surface was entirely normal so far as could be judged by the naked eye.

The temperature chart in this case was so influenced by the occurrence of German measles that it was difficult to draw any conclusions from it. The temperature, however, on admission was 102, and even before the onset of the German measles had reached 103 and was irregular in character. After the lavage and irrigation it fell to 99, and the signs of septic arthritis disappeared; it rose again with the onset of German measles, but was normal at the time of operation. After the operation, at which the patella was sutured, there was never any rise of temperature, the highest point reached being 99.5 on the second day. The temperature fell to normal on the third day, and remained there until discharge from the hospital. The patient is now walking about as he did before the injury.

Clinical Notes, Suggestions, and New Instruments

A REVERSIBLE AND ADJUSTABLE ELBOW SPLINT

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The accompanying illustrations sufficiently well illustrate this simple brace, so that there remains only a necessity for enumerating some of the advantages of this appliance over the more commonly used types of elbow braces. The same principle may be used in treating injuries in and about the knee joint when forcible flexion or extension is desired. It is to be remembered, however, that splinting is to be used only in conjunction with other means to obtain a result in long standing conditions.

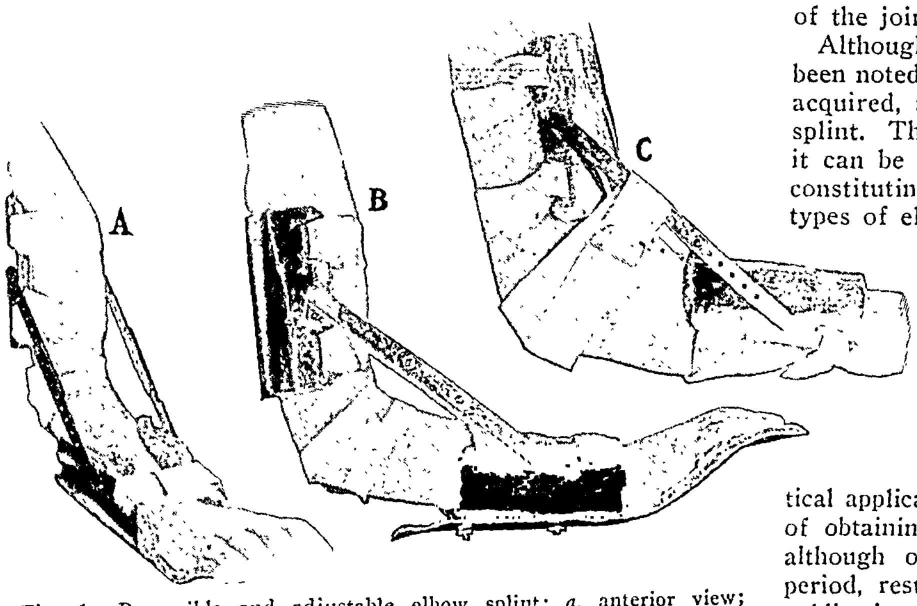


Fig. 1.—Reversible and adjustable elbow splint: *a*, anterior view; *b*, lateral view; *c*, splint applied to the flexor surface of the joint.

Those cases requiring the dressing of wounds about the elbow may be more easily treated with this brace, because no part of the appliance comes in close proximity to this region. Most other splints interfere more or less in the dressing of these wounds, because they depend for their support on a structure placed along the posterior surface of the joint. None of the usual types can be applied to the anterior surfaces of the arm and forearm.

In chronic arthritic conditions or in cases in which limitation of motion has occurred or is apt to occur from any other cause, excepting that due to bony obstruction, the adjustability allows frequent changes of position to be made for the increase of flexion or extension, as the case may indicate. In cases requiring forcible extension, it has been found that, by attaching an additional strap to the rods connecting the two application plates and passing this strap about the posterior surface of the joint, as much *direct* pressure can be exerted as is possible to be satisfactorily borne by the patient. This strap may be made of material of sufficient elasticity to afford a constant traction tending to the desired extension of the joint.

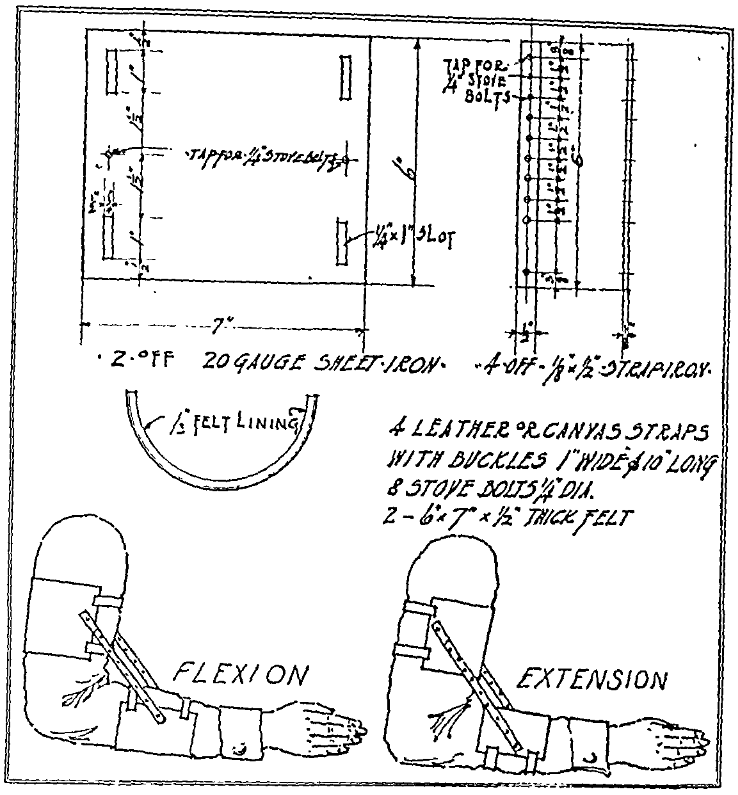


Fig. 2.—Details of splint.

Although it may seem to be of minor consideration, it has been noted that after a sufficient degree of extension has been acquired, a blouse or coat may be easily worn outside the splint. The simplicity of the device and the ease with which it can be made and adjusted must also be kept in mind as constituting a decided advantage over more complicated types of elbow splints.

Owing to the lightness of the splint, it is most comfortably worn. This point is of special importance because of the fact that the heavier appliances or plaster casts exert a constant and undesirable traction on the muscles and structures in and about the shoulder joint.

There are many other desirable points which are more easily illustrated by the use of the splint than described in a lengthy paper. Practical application of this device has been made for the purpose of obtaining flexion and extension of the elbow joint, and although observations have been made over only a short period, results have been sufficiently gratifying to make the publication of this article seem advisable.

Figure 1 *A* shows an anterior view of this splint applied to a compound, comminuted fracture involving the elbow joint. Figure 1 *B* gives a lateral view of the same case and shows how easily a "cock-up" splint may be riveted to the lower, forearm plate, thus affording a combination splint for those cases of wrist drop that are so commonly seen in injuries in and about the elbow joint. Figure 1 *C* shows the splint applied to the flexor surface of the joint.

The Wisdom of Confucius.—It is easier to know how to do a thing than to do it.

STAB WOUND OF HEART: SUTURE OF HEART MUSCLE, WITH RECOVERY

Ethan Flagg Butler, M.D., Yonkers, N. Y.
Major, M. C., U. S. Army

History.—H. M., man, aged 42, roofer, admitted to Ward L-4, Second Surgical Division, Cornell, Bellevue Hospital, Nov. 10, 1918, had received a stab wound in the left chest, from which there was considerable hemorrhage. The family history was negative. The patient had had gonorrhea in youth. Since the age of 18 he had been subject to "fits" occurring on an average of once a month and generally following alcoholic excesses. There was a pronounced alcoholic history with more or less regular Saturday night sprees. Otherwise the history was negative. On the night before admission the patient had been drinking heavily, and on the day of admission at 2:30 p. m. he came home and entered into an argument with his wife. He was evidently abusive, and in self defense, the wife seized a "long, sharp butcher knife" and stabbed him in the chest. The patient bled profusely from the wound and commenced to experience respiratory difficulty. He was, however, able to walk across the street to a police station, where an ambulance was called and the patient brought immediately to the hospital. He was still suffering from dyspnea, pain in the left chest, and inability to lie down, but the early profuse hemorrhage had subsided and there was very slight flow of blood from the wound.

Physical Examination.—The patient was a large, well developed man, with good muscular tone. When first seen he was sitting in a chair, with marked dyspnea; the respirations numbered 40 and were labored. The dyspnea was increased by lying down. The patient complained of pain in the precordial region, the pain being accentuated by respiratory motion. There was moderate cyanosis of the head and the extremities. The pulse was 80 and regular in rate, but apparently of low volume and tension. Over the costal cartilage of the left fifth rib, 6 cm. from the anterior midline, there was a stab wound 2 cm. long with gaping edges. There was evidence on the clothing that there had been profuse hemorrhage from this wound. When seen first in the hospital, there was very slight oozing from it. Examination of the chest disclosed a resonant percussion note over all the pulmonic areas. The breath sounds were normal. There was no evidence of hemothorax. The area of cardiac dulness did not extend beyond the right sternal margin, and extended to the left to the nipple line at the sixth rib. It had not apparently increased in extent. The heart sounds were faint, but there were no murmurs nor other adventitious sounds. The examination was otherwise negative.

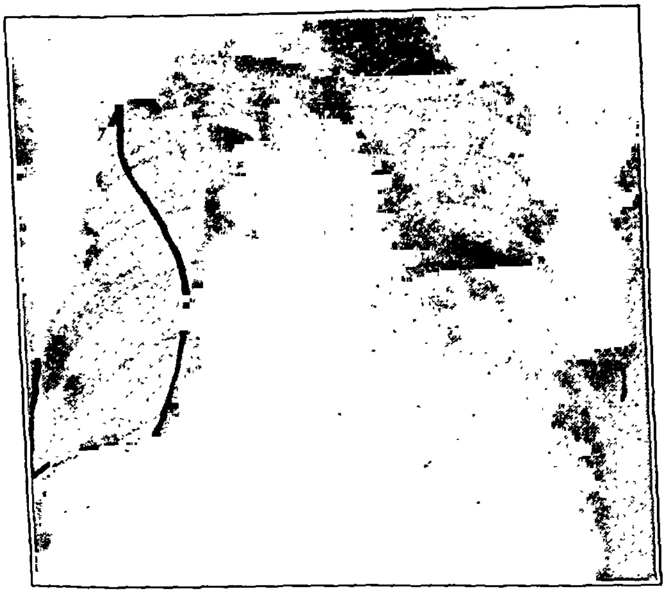


Fig. 1.—Roentgenographic findings forty-eight hours after operation: large left pneumothorax outlined; slight displacement of heart to right.

It seemed advisable to submit this wound to surgical cleansing, on account of the nature of the agent causing it, and the attendant possibility of serious infection. Furthermore, because of the possibility of hemorrhage from the large vessels near the tract of the knife, it seemed prudent to explore the tract thoroughly and tie off any bleeding points.

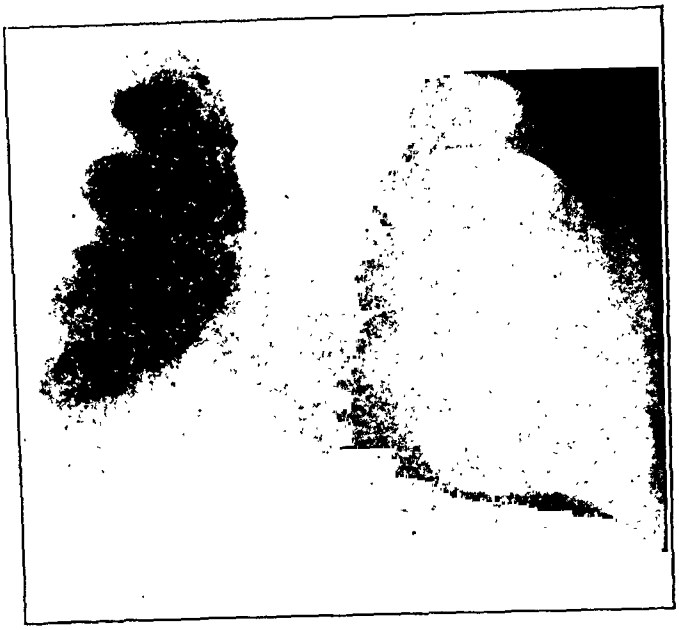


Fig. 2.—Eleven days after operation: left pneumothorax absorbed; heart returned to normal position; very slight left hemothorax.

Operation.—Four and one-half hours after the accident, with the assistance of Dr. M. T. Roote of the Bellevue Hospital house staff, the operation was begun under local anesthesia. The usual procedures of wound excision, with resection of the skin margins, following the tract of the knife through the subcutaneous tissues and the damaged muscle, were carried out. At this point it was discovered that the knife had passed cleanly through the fifth costal cartilage, severing it transversely. A general anesthesia was then employed, and 12 cm. of the fifth rib resected subperiosteally. The left pleural cavity was opened, the left lung collapsing moderately. No injury to the lung could be determined. Below the point of damage to the fifth cartilage there was a puncture wound through the pericardium 1 cm. in length. From this puncture wound, there was a slow, moderate flow of dark blood, and there were found in the left pleural cavity about 100 c.c. of blood. The opening in the pericardium was enlarged by a longitudinal incision 4 cm. long. A slight amount of clotted blood was found in the pericardial sac, anteriorly. There was no general hemopericardium. In the anterior wall of the left ventricle, there was a wound 1 cm. long extending for an unknown distance into the heart muscle, but apparently not penetrating into the cavity of the ventricle.

On opening the pericardial sac, there was a recurrence of severe bleeding from the wound in the heart, the blood flowing in large spurts synchronous with the contraction of that organ. This could be easily controlled by pressure, but immediately recurred on the release of pressure. Apparently this bleeding was from the muscular wall of the heart, the blood being quite dark. At this point in the operation the heart rate was much accelerated, and it was with great difficulty that two catgut sutures were introduced into the wound in the heart. As soon, however, as these sutures were secured in place, all bleeding ceased. Very little blood had escaped into the pericardial sac, and after the excess had been removed the defect in the pericardium was closed by continuous catgut sutures. However, during the suturing of the heart muscles a considerable amount of blood had escaped into the left pleural cavity. On account of difficulty with the aspirating outfit, it was impossible to remove all of this blood without recourse to sponging, which caused respiratory distress and had to be abandoned. Therefore an excess of blood — about 300 c.c. — was allowed to remain in the pleural cavity and the wound in the chest wall was closed tightly in layers — parietal pleura, with intercostal muscles, pectoral muscles, subcutaneous tissue and skin. One rubber tissue drain was introduced into the wound as far as the pectoral muscles.

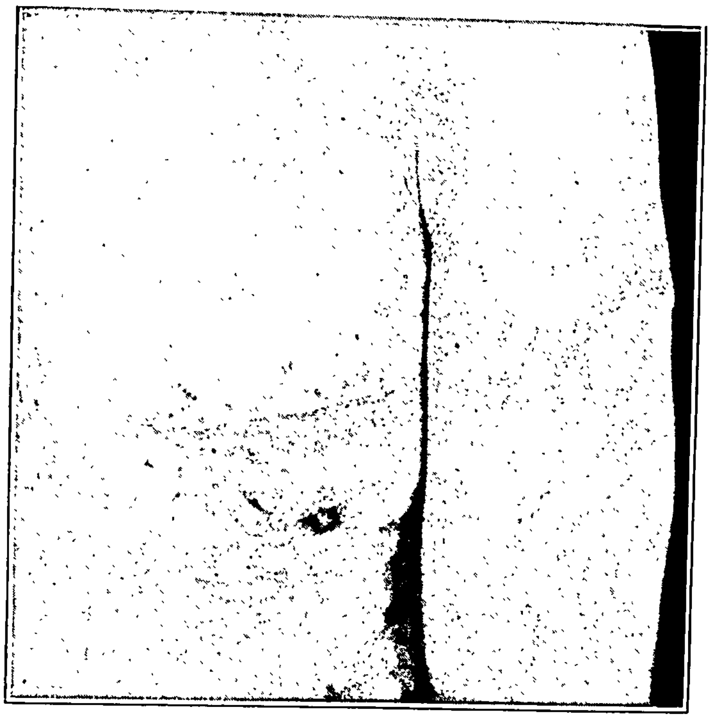


Fig. 3.—Appearance of wound twelve days after operation: primary union; all stitches removed.

The patient stood the operation well and recovered satisfactorily from the anesthetic.

Postoperative Course.—November 11, the temperature rose to 100.5 and remained irregular during the day. The respiration varied from 18 to 32, the pulse from 62 to 94. Cyanosis was less marked. The general condition satisfactory. The heart sounds were apparently normal and distinct. The percussion note over the left chest was tympanitic, except in the axilla and posterior base, where it was decidedly dull, on account of blood which had not been entirely removed at the time of the operation. The chest was aspirated, and much dark, frothy blood was removed.

November 12, the temperature varied from 100 to 100.5, the pulse from 80 to 100, and respiration from 20 to 26. The systolic blood pressure was 128 and the diastolic 76. The patient was much less cyanotic, and there was less pain. The general condition was satisfactory.

The temperature reached normal on the fourth day after operation, and except for one slight exacerbation has remained normal since. The blood pressure has varied from 114 to 118 on subsequent reading. The pulse gradually steadied down to an average rate of 80. The respiration subsided to 18. Precordial pain disappeared rapidly and was not complained of after a lapse of five days from the operation. The left pneumothorax very rapidly disappeared. Roentgen examination eleven days after operation detected no trace whatever of this pneumothorax. The patient was kept in bed for one week after operation and then allowed to get up in a wheel chair without any untoward occurrence. Convalescence from that point was uneventful. The wound healed primarily, and sixteen days after operation the patient was transferred to the convalescent home at Burke Foundation, White Plains.

After his return from the convalescent home, he reported back to Bellevue Hospital for observation, and was found to be in a wholly satisfactory condition.

THORACOTOMY: A SIMPLIFIED TECHNIC

Waller O. Bullock, M.D., Camp Zachary Taylor, Louisville, Ky.
Major, M. R. C., U. S. Army

The recent occurrence of epidemic diseases among the new troops in some of the cantonments was associated with an unusually large number of cases of pleural effusions, many of which developed into empyema. A large percentage of these empyema patients required surgical intervention. Some were successfully treated by aspiration alone.

At the base hospital, Camp Zachary Taylor, Ky., out of 128 cases of empyema, for the most part of hemolytic streptococcus origin, treated by open operation, up to the first day of May of 1918, in fifty-five rib resection was performed, and in seventy-three, simple intercostal thoractomy was done. In the first group there occurred seventeen deaths, corresponding to a mortality of 30.9 per cent., while in the second group, eleven deaths occurred, giving slightly less than half the death rate of the former group, or 15 per cent.

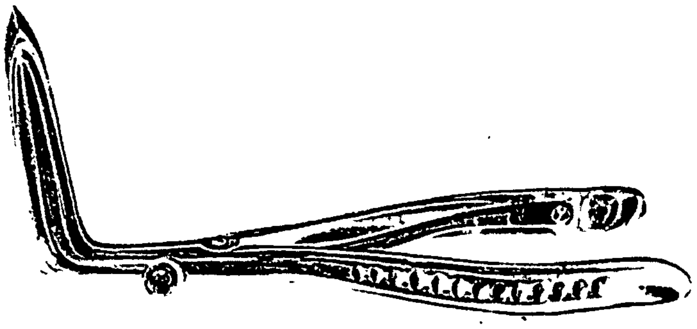
It is not, of course, contended that thoracotomy without rib resection is responsible for this difference in mortality. There are other factors involved, chief of which are the virulence and extent of the invasion, the power of resistance of the patient, and the time that elapses between the occurrence of the effusion and its evacuation surgically. A mortality of 40 per cent. in patients operated on within twenty-four hours of the appearance of the septic effusion (pus or seropus) should be compared with a death rate of 10 per cent. (four deaths) in forty-two cases having an average interval of between nine and ten days between the appearance of fluid and its surgical evacuation, simple thoracotomy being the procedure in the latter group.

If, therefore, at least equally good results may be obtained by the simpler procedure, it should for obvious reasons be preferred. With the object of further simplifying the technic of the operation, the instrument herein illustrated was devised. It is made out of forged steel, following in general plan the Bodenhamer rectal speculum, but having one blade longer and wider than the other. The larger blade has cutting edges for the terminal inch and a half, and tapers to a sharp point. The other blade is narrower, one-half inch shorter, and its blunt end fits into the concavity of the larger blade.

The length over all is 8 inches, the handles measuring 6 inches from the lock. The longer blade is 3 inches long and three-fourths inch wide at the base.

The technic employed in brief is as follows:

1. The pus is invariably located by means of exploratory puncture, and note is taken of the depth at which it is encountered before the needle is withdrawn.



Instrument for simplifying technic of thoracotomy.

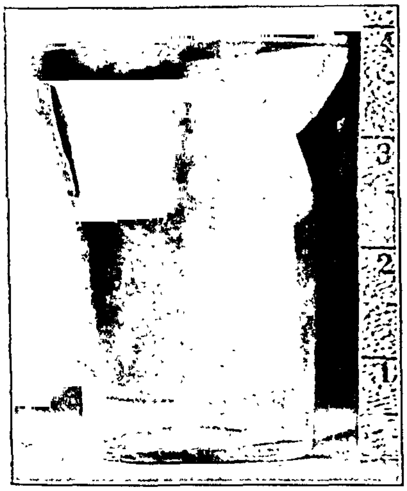
2. The skin is anesthetized at the point so determined for a length of 2 inches, the intercostal space being paralleled and incision being made with knife or scissors.
3. All structures to be penetrated are thoroughly infiltrated with either 0.2 per cent. solution of cocain, procain or cocain substitute.
4. With closed blades under gentle pressure the instrument is pushed between the ribs to a depth one-half inch beyond the point at which the pus was located and the blades separated by closing the handles. The set screw will hold the blades open to an extent sufficient to introduce a drainage tube of any size, even a Brewer tube with a small flange.

The procedure is thus reduced to a simple puncture of the chest wall; but its successful execution depends on the thoroughness with which local anesthesia is carried out.

A GLASS TUMBLER IN THE RECTUM

Orvall Smiley, M.D., Indianapolis

The unusual features of this case are the size and shape of the glass tumbler. C. K., a man, aged 55, entered the Indianapolis City Hospital, March 10, 1919, at 2 p. m., saying that about fifty hours before, with the assistance of a woman, he had introduced a small glass into the rectum for the purpose of exciting sexual passion.



Glass tumbler removed from rectum.

When I was called to the hospital I found him in shock with rapid pulse and rising temperature. I could feel one side of the thin edged glass tumbler tightly wedged about 4 inches up in the rectum with the mouth down, into which had rolled the edematous rectal mucosa, making it impossible to move the glass down by traction.

I opened the abdomen, found a beginning peritonitis, and after opening the rectum I first tried again to push the glass down out of the anus, but could not move it. The glass was then removed with great difficulty from above. The bulge of the glass acted as an obstruction in pulling it out through the pelvis. The top diameter of the glass was $3\frac{1}{16}$ inches, the bottom diameter 2 inches. It was 4 inches high. The two small pieces broken from the top edge facilitated its removal to a degree. The patient died sixteen hours later.

219 Newton Claypool Building.

REPORT OF A CASE OF STEEL IN THE LARYNX

Frank Allport, M.D., and Bryed Wilson, M.D., Chicago

This case is reported, not to expound any new or special surgical technic or diagnostic methods, but rather because it is unusual.

REPORT OF CASE

History.—J. B., man, aged 40, who came to our office, Nov. 2, 1918, reported that on April 19, 1918, while at work in a steel mill shearing tie-plate bars, a fragment of the steel tie-plate flew and struck him on the neck below the point of the chin. He was taken to a hospital where the wound was sutured, and he was treated for about ten days and then returned to work. Since the accident he said that he could not talk above a whisper; and at the time he consulted us his voice was a coarse, rough whisper.

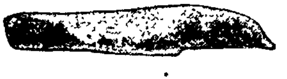


Fig. 1.—Piece of steel, actual size, removed from larynx; weight, 90 grains.

Examination.—The scar of a wound extended from beneath the point of the chin downward and a little toward the left until it reached the level of the larynx. A slight prominence, somewhat conical in shape, at the left lower aspect of the thyroid cartilage of the larynx, was somewhat adherent to the overlying skin, and felt solid to the touch and moved with the larynx. Indirect laryngoscopy revealed an immobility of the left vocal cord, and the whole larynx was moderately inflamed. A roentgenogram disclosed a piece of metal about $1\frac{1}{4}$ inches in length extending anteroposteriorly and apparently through the left thyroid cartilage of the larynx.

Operation and Result.—The patient was taken to St. Luke's Hospital, and under procain local anesthesia an incision was made over the prominence spoken of above. Immediately after going through the skin and subcutaneous tissue, the scalpel came in contact with a hard metallic substance. By careful dissection, the end of the piece of steel was exposed and grasped with tissue forceps. The anterior end of the steel was freed from a few fibrous attachments by means of a small periosteal elevator, and the steel was gently and easily withdrawn. There was, fortunately, no hemorrhage or other undesirable complications. The incision was closed by one silk suture. The man was placed in bed under a steam tent and carefully watched throughout the next twelve hours and was not allowed to talk. During that time he had had no troublesome symptoms whatever, and now when he was asked a question he replied in a voice that was hoarse but was a speaking voice and not a whisper, as had been the case prior to his operation. He left the hospital in two days, and at the end of a week his voice was a little rough but almost normal. Since then the roughness has disappeared. On examination by indirect laryngoscopy, the vocal cords are normal in appearance and the left cord again moves normally.

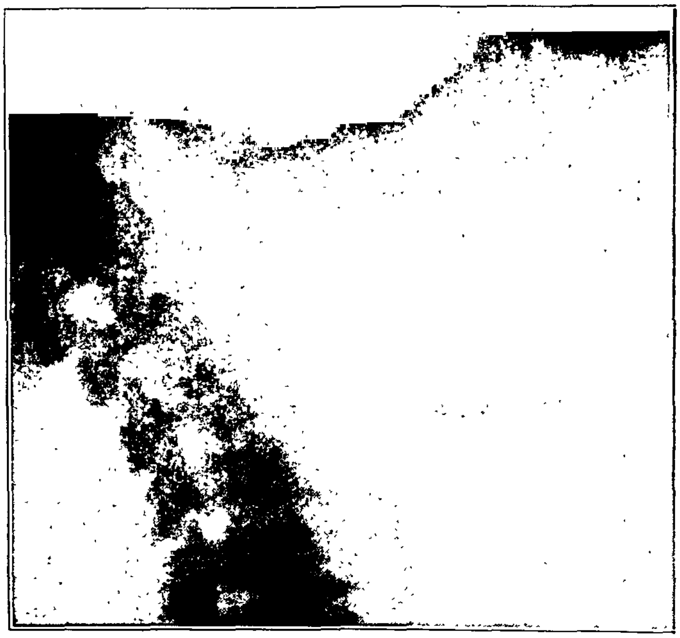


Fig. 2.—Lateral view of steel fragment in wall of larynx.

COMMENT

It is probable that the steel had not actually penetrated into the interior of the larynx but had lodged in the cartilaginous wall, so to speak, in such a manner as to immobilize the vocal cord of that side, and the removal of the steel allowed the cord again to functionate and the patient's voice recovered its normal tone.

7 West Madison Street.

Adaptability of Breast Milk.—There is no such stability in the breast milk as in the milk formula in the bottle. It changes not only several times a day and during each nursing, but is influenced and determined by the frequency of nursing, length of nursing and vigor of nursing, that is, it adjusts itself to the kind of baby and the condition of the baby at the breast. How valuable this is when the baby is not feeling well, or needs less energy food, as in summer, all who treat babies know [illegible] while a milk [illegible]ying laborat[illegible] looks impressive wi[illegible] pasteur[illegible] and instrume[illegible] precision, it is not [illegible]le to th[illegible]ate laborator[illegible] mother's breast. [illegible], M[illegible]

MENINGOCOCCIC ENDOCARDITIS: REPORT OF CASE

Murray C. Stone, M.D. (Springfield, Mo.)
Major, M. C., U. S. Army
and
Walter D. Brown, M.D. (Beaumont, Texas)
First Lieutenant, M. C., U. S. Army
CAMP LOGAN, TEXAS

History.—G. A., man, aged 24, with negative family history, had had the usual diseases of childhood, except scarlet fever and diphtheria. Since childhood he had been in perfect health. His present illness began about 4 p. m., Nov. 28, 1918. He had a severe frontal headache, fever and sweats. His symptoms continued during the night, the headache allowing him to get very little rest. The next morning, in addition to the headache, which was about the same, he had severe pains in the calves of the legs. He remained in quarters during the day and the following night. On the morning of November 30 he noticed an eruption on the eyelids and on the trunk, arms and thighs. He was admitted to the base hospital at 8 a. m., November 30. When seen shortly afterward his headache was better, the aching in the legs had disappeared, he had no cold nor cough, his appetite was poor, and he felt feverish.

Examination.—The patient was well developed, and weighed approximately 180 pounds. His mentality was clear. He appeared slightly depressed, but not irritable or nervous. The only striking objective sign was the purpuric rash, which was macular, about 0.25 to 0.5 cm. in diameter, and very scattered. It appeared on the upper eyelids, the shoulder and the pelvic girdle, arms, hands and thighs. The reflexes at this time showed nothing remarkable. The buccal mucous membrane and the throat were red. All other physical signs were negative.

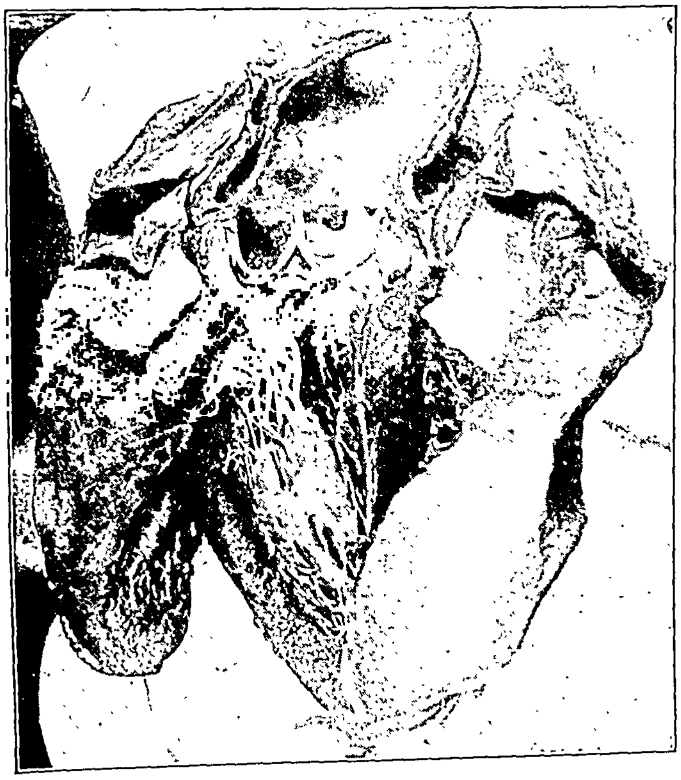


Fig. 1.—Photograph of the heart, showing aortic valve with extensive lesion on one cusp. On the inner surface of the cusp is seen a vegetation, while at the base of the outer surface there is a small, deep ulceration. Smears from this showed many meningococci.

Treatment and Course.—Shortly after admission, lumbar puncture yielded 40 c.c. of fairly cloudy fluid under strong pressure. Thirty c.c. of antiserum were administered intraspinally and 1 c.c. hypodermically as a desensitizing dose. An hour later, 120 c.c. of antiserum were administered intravenously. Daily intraspinal and intravenous injections, in the same amounts as stated above, were administered up to December 6. During this time the patient showed gradual improvement. The spinal fluid cleared and became free of meningococci. His appetite improved, and he was comfortable except for the serum urticaria which appeared, December 5. Neck stiffness and Kernig's sign appeared after the first treatment, and persisted until the end.

No other notable change occurred until December 10, when the routine morning examination revealed a purpuric spot about the size of a dime on the dorsum of the right hand, and another on the outer surface of the left ankle. The patient had rested well during the night and remained comfortable until noon, when he developed a severe headache, together with numerous additional purpuric spots on the hands and feet. Lumbar puncture revealed a cloudy fluid under rather low pressure. Daily intraspinal and intravenous treatments, as before, were given for three days, with about the same degree of improvement. The next relapse occurred, December 14, and was again preceded by a purpuric rash. The symptoms during this recurrence being rather mild, and the patient's reaction to antiserum being more intense, he received only one intraspinal and one intravenous injection. The next exacerbation was December 20 and was preceded by purpuric spots on the hands, elbows, knees and feet. The spinal fluid was slightly cloudy. Thirty c.c. of antiserum were given intraspinally. The intravenous treatment, though administered very slowly, had to be almost immediately discontinued owing to a most violent reaction.

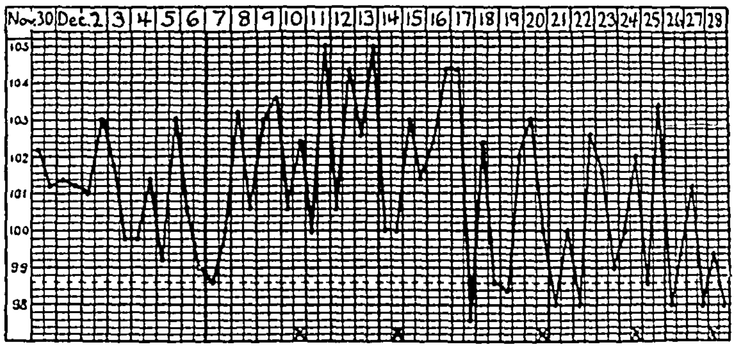


Fig. 2.—In addition to furnishing a good example of a "septic temperature curve," this chart shows how each crop of petechiae was preceded from twenty-four to forty-eight hours by a rise of temperature.

From this time on the patient's condition became gradually worse. Intraspinal injections were given from December 20 to December 24, inclusive.

December 27, another crop of purpuric spots appeared. There was marked mental apathy. Lumbar puncture gave 45 c.c. of bloody fluid. Thirty c.c. of antiserum were given intraspinally. The patient's condition being so desperate, it was considered advisable to give serum intravenously at all hazards. One hundred and forty c.c. were so administered in spite of the patient's becoming violent and dyspneic. The same treatment was repeated, December 28.

December 29, another crop of spots appeared, not so intense in color. The patient sank rapidly, and died at 11:45 a. m. The total amount of serum administered was 1,725 c.c.

Laboratory Findings.—The routine examinations showed a normal urine; the feces were free from parasitic ova, and the throat culture was negative for hemolytic streptococci.

Spinal Fluid: At the first puncture, 40 c.c. of turbid fluid were obtained, showing much pus and a moderate number of meningococci in the smears. Cultures and agglutination test revealed the organism to be a normal meningococcus Type I. A potency test of the treatment serum used in the case was made with the strain of organism causing the infection. Agglutination was obtained in a 1:400 dilution. Specimens of spinal fluid from subsequent punctures gave the showings seen in the accompanying table.

Necropsy.—Body: The patient was a white man, well developed and fairly well nourished. Rigor mortis was present. The skin of the trunk and the limbs showed numerous small red petechiae, and many small, faintly brownish spots, evidently the site of earlier lesions of a similar nature.

Head: The membranes over the convexity of the brain were moderately congested, but showed no exudate nor excess of fluid. The base of the brain about the circle of Willis, and over the surface of the pons, showed a moderate amount of yellowish exudate beneath the pia, which itself was thickened and adherent. The fluid escaping from the spinal canal was moderately in excess, but not especially cloudy. There were numerous minute hemorrhages over the surface of the cerebellum near the pons. The dura covering the base of the skull was noticeably injected, but showed no exudate.

Spinal Cord: The cord and membranes showed practically no gross changes. An occasional small ecchymotic spot was seen beneath the pia. No lesions were noted in the cauda equina. There was some ecchymosis in the muscles at the site of the lumbar punctures.

Abdomen: The peritoneum was normal. The intestine was distended with gas. The bladder was full. The liver was at the costal border.

Pleural cavities: These were free.

Lungs: These were voluminous and filled with air. There was an old scar at the right apex. There were atelectatic areas at the right base.

Pericardium: There were numerous small ecchymoses. The membrane lacked the usual luster, and the sac contained a few drops of a viscid, yellowish exudate.

Heart: There was a slight enlargement, apparently due to hypertrophy of the left ventricle. All the cavities contained fibrin clots. The valves were normal, with the exception of the aortic. The posterior cusp was the site of a pinkish, irregular vegetation, fleshlike in consistency, and with a broad base measuring 1 cm in diameter. The edge of the cusp was free, the lesion occupying the base and involving both surfaces. The outer portion of the lesion was ulcerated into the heart wall for a distance of several millimeters. Other minute vegetations were seen on this and the adjacent cusps. There were a few small atheromatous areas on the ascending aorta.

LABORATORY FINDINGS IN THE SPINAL FLUID

Date	Amt. of Fluid, Cc.	Pus	Organisms (Smear)
Dec. 2	30	Present	Present
Dec. 3	40	Present	Absent
Dec. 4	40	Present	Absent
Dec. 5	40	Present	Absent
Dec. 10	35	Present	Present
Dec. 11	45	Present	Absent
Dec. 12	30	Slight	Absent
Dec. 18	40	Present	Present
Dec. 21	35	Slight	Absent
Dec. 22	40	Slight	Absent
Dec. 23	30	Slight	Present
Dec. 27	40	Present	Absent

Spleen: This was two and a half times normal size, very soft and rather pale.

Liver: The liver was pale brownish, not enlarged, and with consistency diminished.

Pancreas: There was nothing worthy of note.

Stomach: There were a few petechial spots beneath the peritoneum, and also in the omentum.

Intestine: This showed nothing remarkable.

Kidneys: These were large and injected, with indistinct markings and numerous small hemorrhages beneath the pelvic epithelium.

Bacteriologic Findings: Smears from the ulcerated base of vegetation on the heart valve showed many gram-negative diplococci.

Anatomic Diagnosis: Leptomeningitis and pachymeningitis (subacute) of the brain and spinal cord were diagnosed. Incipient pericarditis and acute (aortic) endocarditis were found. Petechiae of the skin, the stomach, the omentum and the pelvis of the kidneys were present.

The cause of death was cerebrospinal fever.

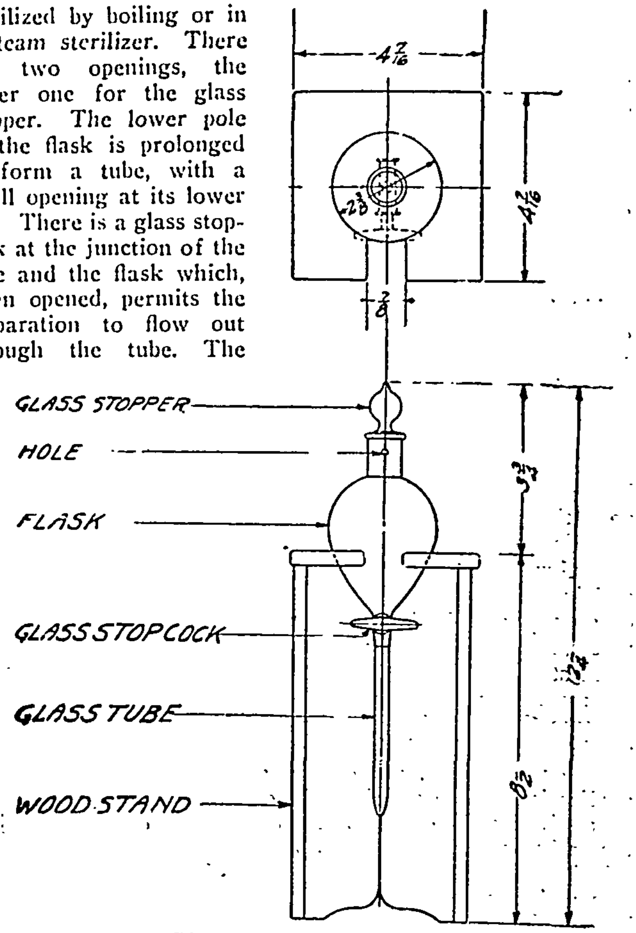
Genius and Eugenics.—Statistics show that genius knows no caste. Men of great achievements originate in all classes in about equal percentages—they cannot be bred. If eugenics plays a part, its influence is greatly overshadowed by other factors. Getting the right start and then giving full play to one's bent are the vital factors in developing capacity for great achievement.—Dr. P. G. Nutting, *Scientific Monthly*, November, 1918.

DICHLORAMIN-T CONTAINER

M. B. Cooperman, M.D., Philadelphia
Assistant Orthopedic Surgeon, Polyclinic Hospital

Those using dichloramin-T have difficulty in applying the solution because of an unsatisfactory apparatus. Atomizers, syringes, medicine droppers and even bottles containing the solution have been used, but all have their faults. Owing to the density of the liquid, it is rather difficult to spray dichloramin-T through an atomizer. Syringes are unsatisfactory because they entail too frequent handling; they are time consuming in drawing up the solution, and contamination of the instrument is very likely. Pouring the liquid from a bottle is crude, while the medicine dropper is very unsatisfactory.

The apparatus here illustrated has proved satisfactory. The container is a pear-shaped glass flask having a capacity of 4 ounces. There are no rubber connections. It can be easily sterilized by boiling or in a steam sterilizer. There are two openings, the upper one for the glass stopper. The lower pole of the flask is prolonged to form a tube, with a small opening at its lower end. There is a glass stopcock at the junction of the tube and the flask which, when opened, permits the preparation to flow out through the tube. The stopper is of blown glass. There is a small hole in the neck of the flask and in the stopper. When the flask is closed and the stopcock opened, the liquid runs out slowly. By turning the stopper until the two holes are in apposition, the air pressure within the flask is increased and the flow of dichloramin-T is thereby accelerated.



Dichloramin-T apparatus.

The solution cannot be contaminated by dust or air while in the flask.

The dichloramin-T flask is kept on a small white enameled wooden stand. It rests snug in its place and cannot fall off.

When a wounded area is to be treated, the flask is lifted out of its stand and carried to the patient. The stopcock is opened and the liquid flows slowly or rapidly at the will of the operator, over and into the wound, bathing every recess.

The same apparatus, but of greater capacity, is used as a container for neutral solution of chlorinated soda.

The advantages in the use of this apparatus are: (1) convenience in treating wounds; (2) simplicity of construction; (3) avoidance of contamination of the dichloramin-T, and (4) the saving of time which its employment effects.

1811 South Broad Street.

PAINLESS INCISION BY THE USE OF PURE PHENOL

A. L. Soresi, M.D. (New York)
Surgeon in the Ospedale Militare Principale, Italian Army
Milan, Italy

Incision of tissues, even deep ones, can be made painlessly by dipping the scalpel in pure phenol (carbolic acid). Incisions made in this manner will not be followed by even the smarting sensation which follows incisions made by other methods.

TECHNIC

A dry, sterile scalpel is dipped in pure phenol. The point of the back of the scalpel is passed over the intended line of incision, so as to mark it with the phenol. A few seconds later the scalpel is dipped again in the phenol and the tissues are incised very slowly and gently, the scalpel being moved up and down as in cutting with a saw. When blood appears, a sponge is used or blunt retractors are applied, if necessary, the scalpel being dipped in pure phenol as often as required. By this method a film of the phenol is deposited on the blade; this film comes in contact with the tissues as they are cut, and thus anesthetizing them. This film is rubbed off by the tissues or washed off by the blood through which the blade passes, and therefore has to be renewed by dipping the scalpel in the acid as often as is necessary, according to the depth of the tissues to be incised.

ADVANTAGES OF THE METHOD

Absolutely painless incisions are obtained of even very deep tissues, such as the pleura, culdesac of Douglas (four cases), etc. Over 100 pleurotomies have been done by this method, during the last epidemic of influenza, by Professor Buschi of Como, Italy, and the writer. It is the least dangerous method of anesthesia, either local or general. The method has been applied in over 3,000 cases and there has never been the slightest indication of absorption or even slight poisoning from its use. It is the easiest method to apply and the one method which can be applied in all cases and which will always work, even when the tissues are most inflamed and in cases in which either local anesthesia is not possible or general anesthesia is contraindicated. Some of the pleurotomies have been done in patients who were in a moribund state and the results have been most gratifying. It is the most convenient method and the one least feared by the patients, for phenol is found anywhere, and no special preparation, not even painting the skin with iodin, or any instrument or apparatus, not even a syringe, is required for its application. Naturally it is the cheapest method imaginable. *In a given class of cases it promotes the complete cure of the pathologic condition.*

This statement is most important and requires special mention and some explanation. Incision made with the phenolated scalpel, on account of the slight cauterization of incised tissues produced by the phenol, do not close as rapidly, as incisions made with the untreated scalpel. This was at first thought to be a very serious inconvenience; in practice, however, it has proved to be one of the best points of this method. In fact, any tissue that is incised, the cut edges of which need not adhere immediately, as is the case when a collection of pus has formed or the tissues are highly infected and inflamed, as in cellulitis, or in the presence of a foreign body embedded in the tissues, the too early closing of the cut edges is prevented and the exit of the pus is facilitated by the insertion of gauze, rubber, tubes, etc., which in certain parts of the body can be placed only with difficulty or cannot be kept in the desired place and always act as foreign bodies with all their undesirable results. When the incision is made with the phenolated scalpel all these means become absolutely unnecessary and the complete cure is rendered more easy, painless and more rapid, while the cosmetic results are also much better. This method of incision finds its best indications in cellulitis of the limbs, collection of pus in Bartholin's glands, in the posterior culdesac of Douglas, in or around the gums, the anus, the neck, the face, the axillae, the groins, etc., in which cases the simple incision made with the phenolated scalpel and the wet dressings or frequent washings with warm liquid constitute the whole treatment, which is both complete and rapid.

The phenolated scalpel, for obvious reasons, should not be used when reunion by first intention and suture are desired. The scars produced by the phenolated scalpel are never ugly; in fact, they are much better than those resulting in cases in which drainage was necessary. A slight redness along the incision lasts at times for some days, but disappears completely in a short time.

REPORT OF CASE OF SEPTIC SINUS THROMBOSIS WITHOUT INVOLVEMENT OF THE MASTOID

St. Julien R. de Caradeuc, M.D., Savannah, Ga.

History.—Private S. B., aged 23, was admitted to the hospital, Jan. 14, 1919, with influenza. January 18 he developed measles; January 30 otitis media purulenta acuta of the right ear; January 31 otitis media purulenta acuta of the left ear. Myringotomy was done in each case the day of the development of the acute ear trouble, and irrigations of boric acid solution every two hours were ordered.

The course of the patient's illness was such as would be expected with this complication of diseases and the temperature ranging irregularly from 98 to 104.

February 14, the patient was transferred to the ear ward, as the influenza and measles had subsided and there was no clinical evidence of any disease aside from the discharge from the ears.

February 18, both ears were dry, and on examination the drums presented the appearance of resolution.

February 20, the patient complained of discomfort over the left side of the face, and kept the head covered the entire day. There was no headache. The blood count was: 15,000 leukocytes; 79 per cent. polymorphonuclears.

February 23, the patient had a definite chill lasting about twenty minutes, followed by a rise of temperature to 105.2 (by mouth), accompanied by severe frontal headache, and followed by a profuse sweat. The blood count was: 23,300 leukocytes; 93 per cent. polymorphonuclears. The blood culture was positive for *Streptococcus hemolyticus.*

Physical Examination.—The heart and lungs were normal. The liver and spleen were normal. There was slight inequality of the pupils. The reaction to light was normal. Knee-jerks were slightly exaggerated but were the same on both sides (this had been the case for over three weeks). There was partial ankle clonus on the left side, and complete on the right side. Examination of the urine disclosed some pus cells and a slight trace of blood. Widal test was negative. The blood was negative for malaria. The fundus examination was negative.

February 24, the patient complained of headache, general in character and not confined to any special point or region. At noon he had a severe chill lasting thirty minutes, followed by a temperature of 104.6. Examination of the ears at this time showed the right drum to be normal in appearance with good inclination and light reflex normal. The left drum showed much the same appearance except for absence of the light reflex and a slight dulness. This was the second ear to become involved, and this difference in appearance might perhaps be accounted for in this way. Both drums presented the appearance of a resolving acute otitis media. There was absolutely no mastoid tenderness at this time or at any time during the course of the illness. The blood count was: 38,000 leukocytes; 94 per cent. polymorphonuclears. The blood culture was negative. The physical examination and the urinary examinations were also negative. The fundi were negative. No lumbar puncture was done.

Operation was decided on, but in view of the urinary findings it was suggested that there might be some kidney condition to account for the septic course the patient was running. A cystoscopic examination was made by the urologist, and the findings were negative.

February 25, the blood count was: 31,200 leukocytes; 94 per cent. polymorphonuclears. The blood culture was negative.

Operation.—A simple mastoidectomy under ether was performed with the following findings: The cortex was thick and very sclerotic. The mastoid cells were normal, and there was no pus even in the antrum.' The sinus was exposed, but as there did not appear to be any definite disease of the sinus, it was decided to uncover and inspect the dura over the temporosphenoidal lobe and cerebellum. This was accomplished after considerable difficulty on account of the ivory-like hardness of the bone and the high middle fossa. Much time was consumed in this way unnecessarily. After exposure of the dura and finding it normal, a further examination of the sinus was made, and, as it appeared paler than normal, it was opened and thick pus exuded and continued to exude as from an abscess. The jugular vein was then resected, after which the sinus was again attacked from the mastoid wound. The diseased walls were cut away, and only the dural wall was allowed to remain. A culture from the sinus showed a pure growth of *Streptococcus hemolyticus*. The vein was normal. The patient made an uneventful recovery.

COMMENT

This case was unusual in that the infection must have spread from the middle ear without involving the mastoid and in that there was a negative appearance of the drum with absolute cessation of the discharge and negative findings in the mastoid. It has been my experience to find great destruction of the mastoid cells when *Streptococcus hemolyticus* is the causative factor, with pain and tenderness over the mastoid negative.

A TEST FOR GLOBULIN IN SPINAL FLUID FOR USE AT THE BEDSIDE [*]

Harold L. Amoss, M.D., New York

Rough tests on globulin solutions showed the isoelectric point to be between p_H 4.4 and 4.7. The p_H value for a 2 per cent. solution of anhydrous potassium dihydrogen phosphate is 4.4. If the globulin precipitation depends on the p_H value of the solution, then a solution of primary phosphate could be substituted for the Noguchi butyric acid sodium butyrate mixture. Various concentrations of the primary phosphate were used, from 2 per cent. to 10 per cent., in testing spinal fluids known to contain excess of globulin, as shown by the Noguchi method. To 0.2 c.c. of the spinal fluid were added 0.6 c.c. of the primary phosphate solution, and the tube containing the mixture was immersed in boiling water for six minutes. The solution acting the most quickly and yielding the largest flocculation was the 3 per cent.; this compares favorably with the Noguchi test.

CHANGE IN p_H VALUE IN BOILING

The p_H values of the mixtures of spinal fluid plus phosphate solution and the mixtures of spinal fluid plus Noguchi's mixture are equal. However, on boiling, the phosphate spinal fluid mixture becomes less acid, as shown by methyl red, while the Noguchi mixture remains unchanged. If the phosphate solution is fortified by the addition of acetic acid so that the p_H value after boiling with the spinal fluid remains about 4.4, the globulin is either not precipitated or the floccules are very minute. Apparently other factors than hydrogen ion concentration enter into the reaction. A 10 per cent. phosphate solution possesses sufficient buffer power to maintain the p_H value during boiling, but the high salt content produces very fine granulation of the globulin. Addition of various amounts of sodium chlorid yields like results. It appears that the globulin precipitation depends not only on the hydrogen ion concentration but also on the amount of salts present.

Spinal fluids tend to become more alkaline even when placed in the ice box over night. For testing such fluids it has been found advisable to add to each 100 c.c. of potassium dihydrogen phosphate solution in 0.05 c.c. of glacial acetic acid.

COMPARISON OF THE PHOSPHATE SOLUTION REAGENT WITH THE NOGUCHI TEST

Through the kindness of Dr. Martha Wollstein of the Rockefeller Institute and Miss Innerstein of the New York City Board of Health Laboratory, twenty-one specimens of spinal fluids were tested with the Noguchi and the 3 per cent. primary phosphate solution plus 0.05 c.c. of acetic acid. Two-tenths c.c. of the spinal fluid was used in each test. In the Noguchi test 0.5 c.c. of 10 per cent. butyric acid in isotonic sodium chlorid solution was added and the mixture heated for two minutes. One-tenth c.c. of normal potassium hydroxid was then added and the tube containing the mixture placed in boiling water for four minutes. The phosphate-acetic acid mixture test was conducted as follows: To 0.2 c.c. of the spinal fluid there was added 0.6 c.c. of the reagent. The tube containing the mixture was placed in boiling water for six minutes. The results of the test are shown in the accompanying table.

The reagent, being less delicate than that of the Noguchi test, gives no precipitate with normal fluids, but consistently indicates fluids in which globulin is present in excess. The reaction requires about two minutes longer heating than is required with the Noguchi test, but requires less manipulation, since one solution is used instead of two. Accurate pipetting of the spinal fluid only is necessary; slight variations in the amount of the reagent added do not affect the end-result. The objectionable odor of the butyric acid is absent; consequently the test can be made in the patient's room. Should small amounts of the solution be spilt in transportation, the diagnostician's kit is not thereby rendered disagreeably redolent. The solution is quickly and easily prepared and is stable, while the Noguchi reagents require accurate titration and tend to become cloudy on standing.

COMPARISON OF RESULTS OF GLOBULIN TESTS ON SPINAL FLUIDS WITH THE NOGUCHI REAGENTS AND WITH 3 PER CENT. POTASSIUM DIHYDROGEN PHOSPHATE ACETIC ACID

Spinal Fluid from Case of:	Butyric Acid Test of Noguchi	3 Per Cent. KH_2PO_4 in 0.05 C.C. of Glacial Acetic Acid
1. *Encephalitis lethargica* (?)	+	+*
2. Encephalitis lethargica	±	—
3. Tuberculous meningitis	++++	++++
4. Normal fluid	±	—
5. Cerebrospinal meningitis	+++	+++
6. Tuberculous meningitis	++++	++++
7. Cerebrospinal meningitis	++++	++++
8. Cerebrospinal meningitis	++++	++++
9. Normal fluid	±	—
10. Tuberculous meningitis	++++	++++
11. Normal fluid	±	—
12. Encephalitis lethargica (?)	++	++*
13. *Normal fluid*	+	—slight turbidity
14. Cerebrospinal meningitis	++++	++++
15. Encephalitis lethargica (?)	++	++*
16. Cerebrospinal meningitis	++++	++++
17. Encephalitis lethargica (?)	+	+*
18. Encephalitis lethargica	+	±
19. Encephalitis lethargica	+	+*
20. Encephalitis lethargica	++	+*
21. Encephalitis lethargica	+	+*

* Floccules smaller than in Noguchi test.

SUMMARY

A suitable reagent for the globulin test in spinal fluid may be prepared by dissolving 3 gm. of anhydrous potassium dihydrogen phosphate in 100 c.c. of distilled water and adding 0.05 c.c. of glacial acetic acid. In making the test, 0.2 c.c. of the spinal fluid plus 0.6 c.c. of the reagent are mixed in a small agglutination tube and placed in boiling water for six minutes. This test is slightly less delicate than the Noguchi test, but offers some advantages over the latter for field work.

Pathology of Schoolchildren.—In the school year 1917-1918, 21,263 children were examined, and of this number only 6,243 were reported to be normal, and 15,020 to be subnormal, or approximately 75 per cent. of the total number; 4 per cent. were found to be suffering from malnutrition, 5 per cent. from enlarged cervical glands, 15 per cent. with defective vision, 3.5 per cent. defective nasal breathing, 5.5 per cent. with defective teeth, 8.5 per cent. with enlarged tonsils, 1.25 per cent. with impediment of speech. These conditions exist in every community.—*Public Health News*, New Jersey.

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[*] From the Laboratories of the Rockefeller Institute for Medical Research.

Special Article

HOSPITAL SERVICE IN RURAL COMMUNITIES

A PRELIMINARY REPORT

Prepared by Ernst C. Meyer, Director of the Department of Surveys and Exhibits of the Rockefeller Foundation International Health Board

New York

(*Continued from page 1223*)

PART II. PRESENT CARE OF SICKNESS

A Comparison of Medical Service Available in the United States and in Europe.—As the care of the sick is dependent largely on physicians, it is of interest to inquire into the availability of medical service. Facts set forth in Table 8 show that the United States in 1910 had three times as many physicians in proportion to the population as the most favored nations in Europe. This larger number may have been needed years ago when the population of the country was extremely scattered; but as the population becomes more dense, the necessity for the same proportionate number of physicians decreases.

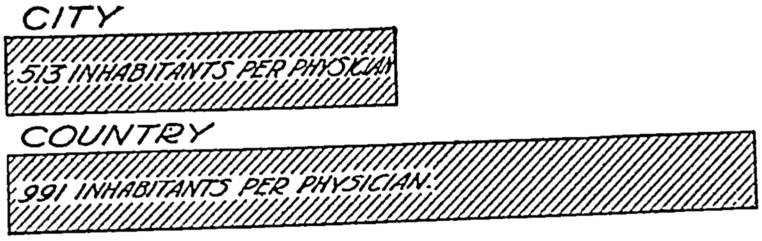

Fig. 4.—A comparison of medical service available in city and in country.

Since 1850, the output of physicians from the medical schools was rapidly increased, so that between 1900 and 1906 inclusive, the annual output exceeded 5,000. The largest number was graduated in 1904, the number in that year being 5,747. Since 1906, as a result of the improved standards of preliminary education and the merging of two or more medical schools in various cities by which in every instance one stronger and better equipped college resulted, a rapid diminution in the number of medical schools has occurred. And the annual number of graduates was likewise decreased, until in 1918 it was but 2,807. While this represents a decrease in quantity, it represents a marked improvement in the qualifications of the physicians graduated. It is quite evident that a physician who is competent to administer efficient treatment promptly is able to care for a larger number of patients than one who is not so well trained. That the United States is still abundantly supplied with physicians, if properly distributed, is evident from the fact that in 1918 there was one physician to every 712 people, or more than twice the number reported for the most favored countries of Europe.

More Service by Fewer Physicians than Formerly.—Contrary to widespread opinion, it seems that in proportion to the population the number of physicians has scarcely grown at all. Whereas the population increased about 138 per cent. from 1870 to 1910, the number of physicians increased about 153 per cent. Whereas in 1850 there were 569 people to one physician, in 1910 there were 582.

While difficult to measure, but highly gratifying to record, there undoubtedly has been a very large increase in the need and demand for medical aid during this period. This includes in particular:

1. Better care of chronic diseases, such as tuberculosis.
2. Increased care in childbirth.
3. Increased demand for purposes of laboratory diagnosis.
4. Increased work for public health inspection and control, as, for instance, medical school inspection and quarantine work.
5. Increase in teaching work and medical investigation.
6. Increase in routine laboratory work.
7. Large development of medical journalism.
8. Increased demand for insurance work.
9. Greater interest in health on the part of the public.

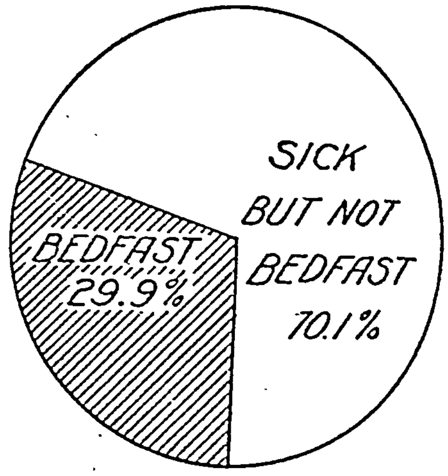

Fig. 5.—Number of bedfast among the sick.

There can be little doubt that the rate of increase in the supply of medical men has failed to measure up to the rate of increase in the demand for medical service. This development is, however, not to be deprecated, but to be welcomed. From the point of view of the general public conditions in the medical profession have been far from satisfactory. The quantity of medical service has been more than offset by its poor quality. With the improvement of medical education, the reduction of the number of graduates, and an increase in the intelligent demand for medical service, the conviction is felt that the quality of that service will continue to improve rapidly.

TABLE 8.—PROPORTION OF PHYSICIANS TO POPULATION IN VARIOUS COUNTRIES

Country	Year	Population per One Physician
United States	1910	582
Austria	1906	2,319
France	1911	1,969
German Empire	1910	2,124
Italy	1911	1,484
England and Wales	1911	1,537
Ireland	1911	1,943
Scotland	1911	1,175
Russian Empire	1912	7,865

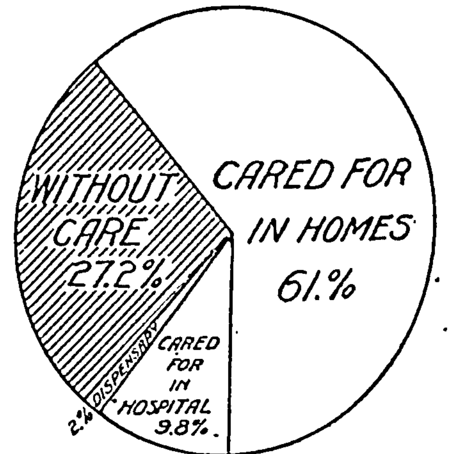

Fig. 6.—How 13,132 cases of sickness were found to be cared for (Metropolitan Life Survey).

Less Medical Service in the Country than in Cities.—Medical service, as expressed by the number of physicians available to render it, is far less accessible in the country than in the city. In fact, the country has only about half as many physicians to a given population as does the city.

In cities of more than 2,500 population there is one physician on an average for every 513 people, whereas in rural regions there is but one physician for every 991 people (Fig. 4). The figures quoted in Table 9 tend to overemphasize the situation, in that many physicians who have an extended country practice undoubtedly live in cities of more than 2,500. But even after allowance for this has been made, the statistics presented fail to express adequately the wide discrepancy between medical service available in urban and in rural communities. The density of population in cities, and the greater speed of communication and transportation enable city physicians to render much larger service in a given time than can be rendered in the country, where many hours are at times consumed on a single call.

TABLE 9.—RELATIVE NUMBER OF PHYSICIANS IN CITY AND COUNTRY

Population Group	Population	Number of Physicians	Population per One Physician
All cities over 2,500...........	46,921,963	91,797	513
Under 2,500 and rural.......	53,476,355	53,431	991

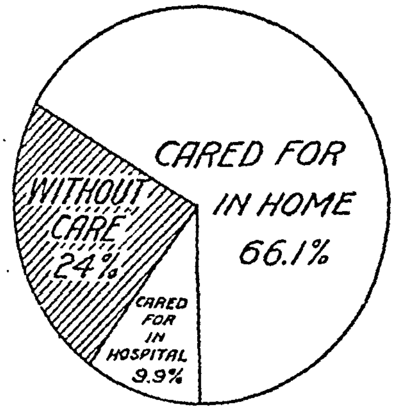

Fig. 7.—How 1,600 cases of sickness were found to be cared for (State Charities Aid Survey).

With the advent of the automobile, improved roads, interurban street car lines, the telephone, and other means of prompt intercommunication, one physician in the rural districts can now care for many times the number that were formerly cared for. Furthermore, country patients now in large numbers go to the city, where they receive treatment by city physicians and in city hospitals.

The different sections of the United States are supplied in a widely variant manner, as is evident from Table 10.

TABLE 10.—SUPPLY OF PHYSICIANS IN VARIOUS SECTIONS OF THE UNITED STATES

Division	Population per One Physician in Communities of: 25,000 and Over	10,000 to 25,000	5,000 to 10,000	2,500 to 5,000	Under 2,500	Total
New England............	594	695	741	723	713	649
Middle Atlantic..........	621	686	614	548	1,037	702
East North Central......	511	513	474	407	940	633
West North Central.....	454	484	424	366	914	668
South Atlantic...........	405	454	381	350	1,212	792
East South Central......	418	421	352	313	987	760
West South Central.....	461	445	368	317	933	735
Mountain................	440	444	489	455	1,040	711
Pacific....................	466	523	384	364	1,060	599

The rural South has the poorest medical service. The states of the Mountain and Pacific divisions come next, with the middle Atlantic states, New York, New Jersey and Pennsylvania, fourth. It is also of interest that in the South opportunities for medical service in all of the cities are larger than in the North. This may be due to the fact that physicians very largely locate in cities, particularly in those with a population of more than 2,500, and practice in the surrounding country regions. To the extent to which this is true, larger medical service is being given in rural regions than the figures would seem to indicate. In any event, it seems that the cities of the South have a more abundant supply of physicians than those of the North.

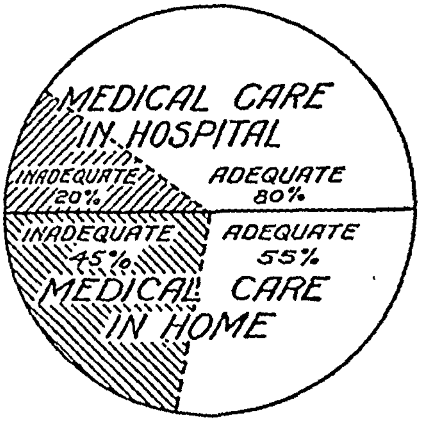

Fig. 8.—The large proportion of the sick who are inadequately cared for.

The country regions, it is believed, are further handicapped in medical service by virtue of the fact that physicians in practice there are older, and probably on the whole less up-to-date and efficient in their methods, than in the cities. Whereas, in 1910, 67.2 per cent. of the physicians in the forty-two largest cities were under 45 years of age, only 59.93 per cent. of those in communities of less than 50,000 population were under that age.

What the rural regions appear to need most is not a greater number of physicians but more wise and extensive use of the medical facilities which both country and city at present offer. These regions also need to develop a keener appreciation of the value of the public health nurse and of the full-time health officer. The development of efficient public health administration, better distribution in certain areas of private practicing physicians, harmonious cooperation between public and private health service, and intelligent demand for medical service—these are the things toward which the open country must strive.

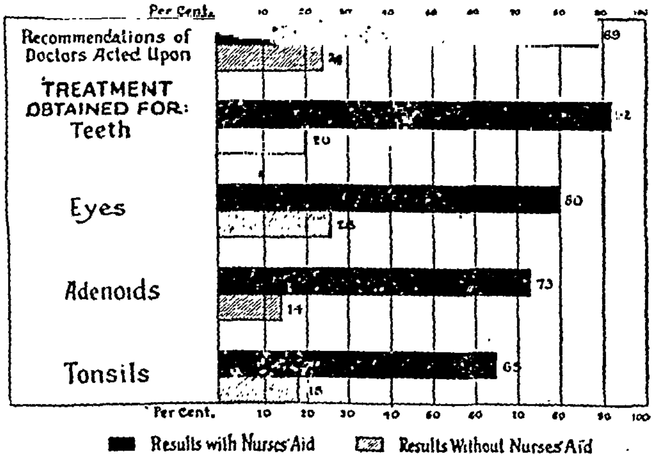

Fig. 9.—How follow-up work by nurses increases the value of the physician's advice. (Through the courtesy of Dr. Thomas D. Wood, Teachers College, Columbia University.)

HOSPITAL FACILITIES IN THE UNITED STATES

No study has ever been made of hospital facilities in the United States. Practically the only information covering the country that is available is found in the United States Bureau of the Census Report of 1910, in which a section is devoted to hospitals and sanatoriums. A summary of the information therein contained is given in Table 11.

In a rough sort of way this table may be a measure of hospital facilities available in various parts of the country. It was not possible to secure information as to the extent to which the urban centers might be favored in the matter of hospital service.

TABLE 11.—HOSPITAL FACILITIES

Division	Number of Persons Treated per 100,000 Population	Number of Persons For Every Hospital and Sanatorium	Number of Persons Population per Physician
New England states	6,023	28,244	564
Middle Atlantic states	3,564	38,631	619
Pacific states	2,911	36,775	435
Mountain states	2,405	23,725	537
East North Central states	2,163	48,028	576
West North Central states	1,554	45,461	573
South Atlantic states	1,293	63,186	795
West South Central states	844	125,493	608
East South Central states	568	135,644	690

THE NUMBER OF THOSE SICK IN BED

The various sickness surveys already referred to showed that about one out of every three sick persons was bedfast. It is important, however, to understand that the Metropolitan Life Insurance Company in its surveys classed all people who because of sickness were actually in bed, either at home or in hospital, as "bedfast" (Fig. 5).

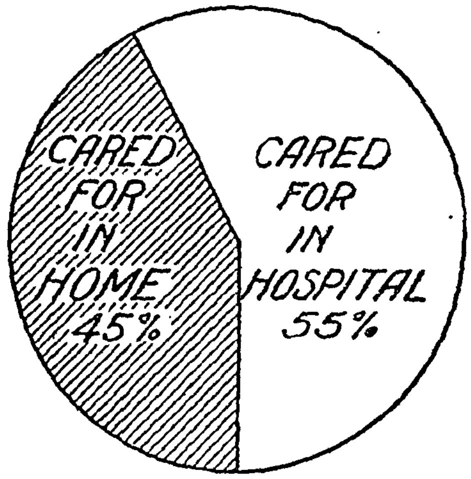

Fig. 10.—How cases of typhoid were found to be cared for.

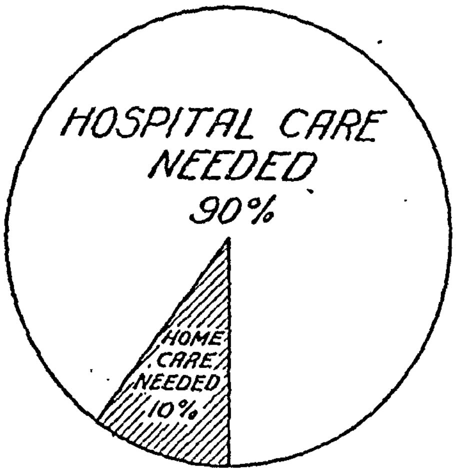

Fig. 11.—How cases of typhoid should have been cared for.

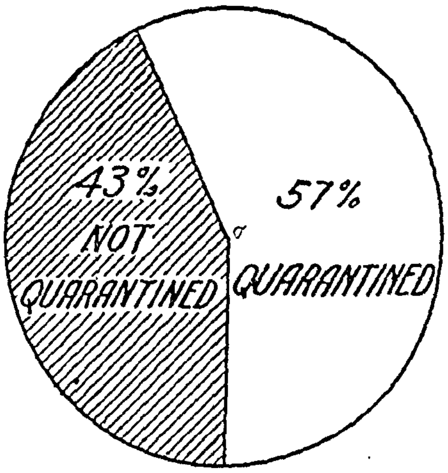

Fig. 12.—The large proportion of cases of measles that were not quarantined.

The bedfast constitute a distinctive sick problem. They are generally a heavy drain on the time, energy and resources of those on whom they are dependent. For many of the bedfast the logical place of treatment is the home, for others the hospital. It has been established that a considerable proportion of the bedfast are inadequately cared for, but definite statistical and other data are lacking as to the degree to which hospital care should be given beyond what is being done now.

TABLE 12.—PROPORTION OF BEDFAST

Area	Total Sick	Bedfast Number	Bedfast Per Cent.
Boston	1,902	326	17.1
Pittsburgh	1,869*	472	25.3
Rochester	798	220	27.6
Chelsea	356	129	36.2
Kansas City	862	279	32.4
North Carolina	1,881	537	28.4
Pennsylvania and West Virginia	7,333	2,437	33.1
Total	13,132	3,928	29.9

* The Pittsburgh total is included also in the figures for Pennsylvania and West Virginia.

Table 12 summarizes the findings in the sickness surveys within the areas indicated:

ADEQUACY OF MEDICAL CARE

It would seem from such information as is available that a large proportion of the sick, no matter where found, whether in country or city, received no medical care whatever. Out of 13,132 specific cases of sickness covered by the surveys of the Metropolitan Life Insurance Company, 4,411 had no medical care whatever. Among the total numbers of cases of sickness there were 11,975 classed as disabled, that is, the sick were unable to work. Of the latter group no less than 27.2 per cent. had no medical care. This undoubtedly was due more to failure to call a physician than to a lack of physicians. It was also noted that a large percentage of the medical care given was inadequate. This also was probably due more to failure on the part of the patient to call a physician or to having him call with sufficient frequency than to a lack of physicians. A relatively small number of those cared for, 9.8 per cent., were cared for in a hospital. The rest were either *not* cared for or were cared for in the home (Fig. 6). Table 13 presents details.

Of a further group of 1,600 cases, nearly 400, or one quarter of all those who needed medical care, had none. This was probably due more to the common neglect to call a physician, or to poverty, or to a possible lack of confidence in physicians, than to a shortage of the supply of physicians. Only a small proportion of the sick were cared for in hospitals (Fig. 7).

TABLE 13.—MEDICAL CARE OF THE DISABLED

Area	Disabled	Not Cared for	Cared for No.	Cared for %	Nature of Care Hospital No.	Hospital %	Home No.	Home %	Dispensary No.	Dispensary %
Boston	1,747	442	1,305	74.7	336	25.7	816	62.5	153	11.7
Rochester	661	239	422	63.8	85	20.1	337	79.8		
Chelsea	331	76	255	77.0	56	22.0	166	65.0	33	12.9
Kansas City	816	252*	564	69.1	45	8.0	512	90.7	7	1.2
Pittsburgh	1,791	418	1,373	76.7	200	14.6	1,164	84.8	9	0.6
Pa. and W. Va.	6,908	1,725	5,183	75.0	601	11.6	4,527	87.5	55	1.0
North Carolina	1,512	519	993	65.7	46	4.6	917	95.3		
Total†	11,975	3,253	8,722	72.83	1,169	13.4‡	7,305	83.63	218	2.81

* Other figures for Kansas City refer to sick; not to disabled.

† Excluding Pittsburgh.

‡ The percentage given in this table for cases of sickness cared for in hospital (13.4) is based on the number cared for. Figure 6 includes both the disabled cared for and not cared for; the percentage of hospital care therein shown (9.8) necessarily was based on the total number of disabled; hence the apparent discrepancy.

Table 14 presents the statistical details of the care of the 1,600 cases of sickness referred to above.

INADEQUACY OF CARE

The 1,600 cases of sickness already referred to were studied with a view to determining the adequacy or inadequacy of medical care received. By "adequate" care was understood care which resulted in the patient's recovery when recovery could be expected, and which was of such a character that neither the patient nor the community incurred avoidable risks. Unfortunately, four out of every ten of the sick did not get the sort of care they needed. It was found that almost half of those cared for in the homes, and 20 per cent. of those cared for in hospitals, were inadequately cared for (Fig. 8).

TABLE 14.—CARE IN ONE THOUSAND SIX HUNDRED CASES OF SICKNESS

Cases	Number	Per Cent.
In homes	1,058	66.1
In hospitals	159*	9.9
Without medical care	383	24.0
Total	1,600	100.0

* Includes fifty-eight cases cared for in hospital and home.

The inadequacy of hospital care was due chiefly to lack of social service and follow-up work. The importance of follow-up work in securing results in connection with medical care is strikingly illustrated in Fig. 9. The statistics on which it is based were gathered in connection with the medical inspection of school children. The principle, however, would seem to apply also to adults (Fig. 9).

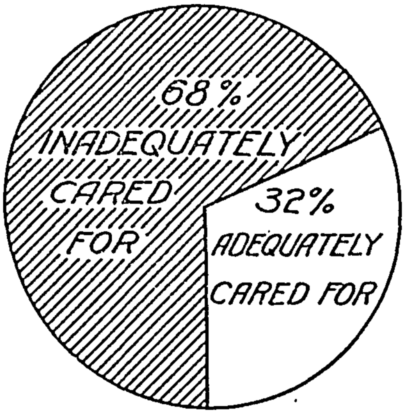

Fig. 13.—The large proportion of cases of measles that were inadequately cared for.

In many cases, patients returned to homes unprepared for them, so that, lacking adequate care, proper convalescence was impossible. In case of home care, poverty, lack of proper surroundings, ignorant attendance, and insufficient medical attention were largely responsible for the inadequacy of care received. In some cases people did not know how to secure good service, or good service was not available in every instance.

TABLE 15.—PROPORTION OF HOSPITAL AND HOME CARE NEEDED

Proper Place for Medical Care	Number of Cases	Per Cent.
In hospitals	442	28.0
In homes	1,158	72.0
Total	1,600	100.0

A few concrete illustrations will serve to emphasize the point. Out of twenty-nine cases of typhoid fever, 45 per cent. received home care, and 55 per cent. were cared for in hospitals (Fig. 10). It was thought that at least 90 per cent. of these cases should have had hospital care, and but 10 per cent. could safely be given home care (Fig. 11).

A further condition which threatened the health of the community was discovered in the treatment of measles. Of 176 cases, 57 per cent. were quarantined, and 43 per cent. were not quarantined. Fifty-three of the seventy-six cases not quarantined were under medical care (Fig. 12). It was found that but 32 per cent. of the 176 cases had adequate care; the rest had inadequate care (Fig. 13). The significance of this situation becomes still further apparent when it is known that these cases represented 2,835 days of sickness, and a loss of 917 school days on the part of seventy-four children of school age.

Similar lessons might be drawn from the conditions found to surround the care of malaria, scarlet fever, whooping cough, diphtheria, grip, chickenpox, tuberculosis and other diseases.

CARE RECEIVED AND CARE REQUIRED

Only about one third of the 1,600 sick who needed hospital care received it. In actual numbers, 159 had such care, whereas 442 were thought to require it. The lack of medical care, as already emphasized, was undoubtedly due more to inability to pay a physician or to neglect to call him than to a scarcity in the supply of doctors. Of those who had no care whatever, the majority could have been cared for in the home, whereas others should have been removed to a hospital (Fig. 14). Table 15 presents the statistical details on this point.

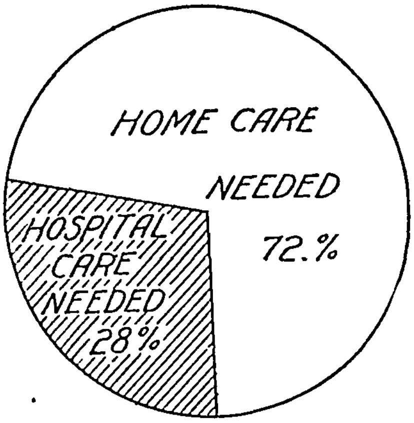

Fig. 14.—The proportion of hospital and home care needed by 1,600 cases of sickness.

Back to School.—In a bulletin of the Children's Bureau on the day's work and the empty schoolhouse, attention is called to the fact that the compulsory school attendance law does not protect the children as it should from the evils of long hours in industry and in the fields in agriculaural work. In the administration of this law, although many officers do their best to enforce the law, there are still many loopholes through which children may be piped to work, keeping them from the schools where they belong. The status of school terms and requirements as to attendance are thus set forth: In ten states the period of attendance is below five months. In Alabama, children must attend school for eighty days, and even this short term may be reduced to sixty days; in Florida, the attendance required is eighty days; in Georgia, four months; in Mississippi, sixty days, but the school board may reduce this to forty days; in North Carolina, four months; in South Carolina, four months in agricultural districts for child laborers; in Tennessee outside of cities of 5,000 scholastic population, eighty days, or entire session if this is less than eighty days; in Texas, 100 days, or entire session if less than 100 days; in Utah outside of first and second class cities, twenty weeks; in Virginia, sixteen weeks. Delaware has a required attendance of five months, which may be changed by vote to three. In three of the states mentioned, Florida, Mississippi and South Carolina, even the short term noted is not a statewide requirement.

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SATURDAY, MAY 3, 1919

SOME DETAILS OF PHOSPHORUS METABOLISM

For many years, diverse compounds containing phosphorus have been made topics of special emphasis in relation to medical problems. The highly toxic element phosphorus has been reputed to be a "nerve stimulant" and "reconstructive tonic." Some of its salts can produce no better recommendation than the vague claim of being "tonics." Sodium phosphate has an independent part as a saline cathartic, which is not associated with the previously mentioned medicinal virtues. Organic phosphorus compounds, notably the complex fat derivatives like lecithin, have been charged with exerting specially desirable effects in the direction of nutrition. One reads that they favor constructive metabolism in the body.

It is conspicuously true that complex phosphorus compounds are found widely distributed in the organism, where they unquestionably exert important functions and have specialized uses. It is not without significance, we presume, that phosphatids like lecithin and kephalin are found in practically every cell, or that they occur in such exceptional abundance in the nervous tissues. The production by the mammary gland of the unique phosphorized protein casein is another instance of "phosphorus specialization" in the animal economy. How do such unquestionably desirable compounds arise? Are they constructed out of preformed organic phosphorus-containing groups which are ingested as such, or can they be manufactured de novo from the simpler inorganic phosphorus derivatives? If the production of phosphorized brain cell and lipoids and the chief protein of the mammary secretion is dependent on special organic phosphorized precursors, obviously it becomes of prime necessity to supply these in the diet and in sufficient abundance.

The period of lactation represents a time when the demands for the structures out of which the specific phosphorus compounds of milk are built are particularly augmented. In an elaborate study on phosphorus metabolism as related to mammary secretion, Meigs[1] and his associates in the Dairy Division of the Bureau of Animal Industry have confirmed the conviction already warranted by other investigations in relation to the form in which phosphorus compounds enter the circulation for distribution to the places of need. Normal plasma contains no phosphorized proteins, and probably no phosphorus compounds at all except phosphatids and inorganic phosphates. The phosphorus of these two classes of compounds certainly comprises more than 97 per cent. of all that exists in normal plasma.

Although the concentration of phosphatid and of inorganic phosphorus in this fluid is highly variable, and both can be made to vary by changing the quantity of phosphorus supplied with the ration, one gains the impression, in harmony with observations of Greenwald,[2] that it is the inorganic fraction chiefly that is influenced in this way. In fact, the more recent researches on digestion and absorptions all point to the probability, to quote Meigs, that phosphorus from the digestive tract reaches the general circulation only in the form of inorganic phosphate, that all organic phosphorus compounds are synthesized within the body cells, and that phosphorized proteins are not transported at all by the plasma from one fixed cell in the body to another. If this conclusion is accepted, the special value of widely advertised organic phosphorus compounds alleged to present the element in some form unusually suited for assimilation disappears; for the digestive processes seem to dissolve all ties of complexity and present to the organism for absorption the uniformly simple ions of inorganic phosphates. This contention has long been supported by the Council on Pharmacy and Chemistry in forming an estimate of the claims of unique therapeutic potency ascribed to preparations of organically bound phosphorus, such as lecithins, glycerophosphoric acid, phytin, nucleic acids, and phosphoproteins. Marshall,[3] who conducted investigations for the Council's Committee on Therapeutic Research, has likewise rejected the view that such organic compounds of phosphorus are absorbed and stored as such by the organism. As he points out, in cases in which the introduction of phosphorus is desired to attempt to facilitate the synthesis of organic phosphorus compounds in the body, the inorganic phosphates, such as abound in foods, are entirely suitable for the purpose.[4]

Accordingly, it must not be supposed that because phosphorus enters the circulation in such simple combinations it escapes further constructive changes. Numerous investigations have indicated that phosphatids can be built up somewhere in the body out of ordinary fats and inorganic phosphates. Bloor's well known studies on fat metabolism[5] make it highly probable that fat absorbed from the alimentary tract is soon converted largely, if not completely, into phosphatids of the lecithin type by the red corpuscles. These phosphatids can thus in turn become the sources of a supply of phosphorus to organs and tissues. Meigs and his co-workers believe, in fact, that many of the tissues and organs of the body, of which the mammary gland and the muscles are conspicuous examples, can receive their fat and phosphorus from the blood only in the form of phosphatid. According to their conception, both structures convert the phosphatid into fat and inorganic phosphate; they use the fat, in the one case, to supply the fat of milk, in the other, to burn and supply energy; and they return the inorganic phosphate largely or wholly to the blood. In all of these newer researches the phosphatids play an important physiologic part as forms of transport for fat and phosphorus, respectively; but there is no indication that the body is dependent on a ready-made supply of phosphatids in the diet to maintain such functions, any more than it requires lactose or casein as such in the food intake to insure a proper production of them in the mammary gland.

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[1] Meigs, E. B.; Blatherwick, N. R., and Cary, C. A.: Contributions to the Physiology of Phosphorus and Calcium Metabolism as Related to Milk Secretion, J. Biol. Chem. **37**: 1, 1919.

[2] Greenwald, I.: The Estimation of Lipoid and Acid-Soluble Phosphorus in Small Amounts of Serum, J. Biol. Chem. **21**: 29, 1915.

[3] Marshall, E. K., Jr.: The Therapeutic Value of Organic Phosphorus Compounds, J. A. M. A. **64**: 573 (Feb. 13) 1915.

[4] For a review of the literature see Grosser: Ergebn. d. inn. Med. u. Kinderh. **11**: 119, 1913.

HEMOLYTIC STREPTOCOCCI AND THE TONSILS

Death following a variety of acute infections, like measles and scarlet fever, is at present believed to be due to a secondary invader, usually in the guise of a streptococcus, rather than to the primary etiologic agent. Numerous contributions to The Journal,[6] not to mention other sources of information, have indicated that hemolytic streptococci are widely present in the pharyngeal passages of healthy persons as well as in diseased throats. The incidence of these microorganisms has been reported as high as 82 per cent. in companies of healthy men who have been in army camps for months. During epidemics of measles and of influenza, hemolytic streptococci have been found in some camps in practically all of the throats bacteriologically examined.

The recent investigations of Pilot and Davis[7] at the Cook County Hospital in Chicago, following those of Nichols and Bryan[8] at the Walter Reed General Hospital of the Army in Washington, point to the tonsils as the principal foci of these hemolytic organisms, which are so commonly found in cultures taken from different parts of the mouth and throat. The evidence is in accord as to the predominance of the streptococci in the crypts of the tonsils; and it appears that the frequency of these bacteria is decidedly less in the throats of persons whose tonsils have been extirpated than in the throats of persons having normal tonsils.

As hemolytic streptococci commonly present in the crypts of the tonsils are probably the most important source of the streptococcic complications of various acute infectious diseases, and of terminal infections in the persons innocently harboring the micro-organisms, it is important to ascertain how the secondary infections from them arise. At any rate, it seems more reasonable, on the basis of the knowledge at present available, to charge the responsibility to the tonsil-borne bacteria rather than to an invasion of unusually virulent strains from outside the body. Outbreaks of disease due to the entrance of foreign virulent streptococci unquestionably do occur at times, as the epidemics of septic sore throat testify; but in general the streptococcic infections are presumably associated with preexistent foci, like the tonsils, which harbor the bacteria in the body. Pilot and Davis have thus summarized the possible factors responsible for the secondary streptococcus infections: The existing dormant organisms in the tonsils or throat may become enhanced in their virulence through symbiosis or in some unknown way by the primary virus (measles, scarlet fever, smallpox), or by the bacteria, such as *B. diphtheriae,* the pneumococcus or the influenza bacillus. They may become active through the diminution of the resistance of the local tissues of the respiratory passages. They may attain increased invasive powers through the lowering of the general resistance of the host overwhelmed by an acute or chronic toxemia. Probably all three factors are combined in certain diseases, though one factor often appears to be more important than the others. Thus, in acute respiratory and throat infections, streptococci seem to spread from the tonsillar crypts to the adjacent mucous surfaces, descend into the bronchi and lungs, and enter the blood stream from these tissues. In chronic diseases, on the other hand, the diminution of the resisting power of the blood may admit the streptococci directly into the circulating blood stream without any marked local changes in the throat.

According to the army bacteriologists, local antiseptic treatment of the tonsils has not given satisfactory results, obviously because the crypts cannot be reached effectively in the way that the surface of the organs can. As it was found that excision of the tonsils renders the throat free from the objectionable streptococci in most cases, this operation appears as the only thoroughgoing method of curing carriers. Whether excision of healthy tonsils is justifiable is clearly debatable. There can be no question, however, as to the importance of knowing where danger lurks, so that it can be met and averted with corresponding intelligence.

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[5] Bloor, W. R.: J. Biol. Chem. **19:** 1, 1914; **23:** 317, 1915; **24:** 447, 1916; **25:** 577, 1916; Bloor, W. R., and MacPherson, D. J.: Ibid. **31:** 79, 1917. The Lipoids ("Fats") of Human Blood, editorial, J. A. M. A. **67:** 956 (Sept. 23) 1916; Blood Lipoids and Diabetes, ibid. **67:** 1602 (Nov. 25) 1916; Cholesterol and Fat Absorption, ibid. **70:** 542 (Feb. 23) 1918.

[6] Irons, E. E., and Marine, David: Streptococcal Infections Following Measles and Other Diseases, J. A. M. A. **70:** 687 (March 9) 1918. Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, ibid. **70:** 1146 (April 20) 1918. Fox, Herbert, and Hamburger, W. W.: The Streptococcus Epidemic at Camp Zachary Taylor, Ky., ibid. **70:** 1758 (June 8) 1918. Park, F. S.: War Edema (Kriegsoedem), ibid. **70:** 1826 (June 15) 1918.

[7] Pilot, I., and Davis, D. J.: Hemolytic Streptococci in the Faucial Tonsils and Their Significance as Secondary Invaders, J. Infect. Dis. **24:** 386 (April) 1919.

[8] Nichols, H. J., and Bryan, J. H.: The Tonsils as Foci of Infection in Streptococcus Hemolyticus Carriers, J. A. M. A. **71:** 1813 (Nov. 16) 1918.

STANDARDS FOR GROWTH

The period of physical development of each individual is an era of the highest significance for his entire life. It represents a time when all manner of formative influences are brought to bear on a receptive organism: the years when the bodily background for future potentialities is being created. The forces that direct this development and make its progress possible are at least twofold: hereditary and environmental. The environmental forces include nutrition, work and play, and are in some measure controllable. If they cannot always alter the limitations set by inherited factors, they can nevertheless frequently prevent deteriorating influences from making any inroad on the growing individual or interfering with the best attainment of his developmental possibilities.

If we are to assist in any degree in facilitating a proper environment for the young, it obviously becomes essential to have some standards by which to judge the success of the undertaking. What shall be the index of successful or satisfactory nutrition and growth? In everyday life, primary emphasis is at present accorded to the body weight; for this is something measurable with accuracy, whereas the judgments formed by the appearance of the person under investigation have obvious psychologic limitations. Diagnosis almost always gains in accuracy when exact quantitative measurement can be substituted for the guesswork of subjective impressions. Ascertained facts thus supplant haphazard assumptions which vary with the experience and dependability of the observer. To know that a patient has actually lost or gained 15 pounds in weight is decidedly more helpful than to suspect that he is "looking somewhat thin."

Is body weight the best measure of satisfactory growth in children? Or is the determination of growth in height a better index? Can either or both of these factors be related to age in such a manner as to answer the question, What is the normal? These queries have frequently been raised and discussed. A recent critical review of selected data bearing on the subject has been prepared by Holt[1] of the Columbia University College of Physicians and Surgeons. His statistics show a wide variation in the relation of weight to age—the weight-age curve—among the European nations, all of which are represented in our present American population. With such wide variations as those noted both in foreign and in American boys, it is evident, Holt says, that weight for age is not of great importance in determining the nutrition of a child.

Holt's study shows, further, that the curves for height and age in a general way correspond to those of weight and age among the different groups in the United States and also among the foreign boys in their relation to each other, but the variations in the height-age curves are considerably narrower. As the growth impulse is essentially a hereditary factor, it can be understood why variations in height are so great. The tendency to grow often exerts itself even in the absence of adequate nutrition, so that increase in size may occur with stationary weight at times. It appears from Holt's data that a much more important relationship than weight to age or height to age as an indication of the state of the child's nutrition is that of the weight to height. This index of nutrition appears to be far more independent of nationality; but of course there must be actual increment in size as well as a proper proportionality between height and weight. The weight-height index fixes the child's status in nutrition; the annual increase in size indicates his progress. Deviations from the average may still be regarded as normal. For practical purposes Holt puts the permissible deviation at 10 per cent. The careful inspection by a good observer is by no means to be dispensed with in forming an estimate of good nutrition and growth; but it may advantageously be supplemented by the facts secured through anthropometry.

LIPOVACCINES

Prophylactic inoculation of great masses of people against infectious diseases, such as typhoid, cholera, dysentery, plague and possibly pneumonia, has for years been an ideal in the minds of many sanitarians, especially those who have been in contact with the populous but disease-ridden oriental countries where even simple methods of sanitation have encountered opposition. Inoculation itself, however, has met so many practical difficulties that it has remained largely an unattainable ideal. With the vaccines heretofore used, a relatively severe local and general reaction followed the inoculation; and while the health officer, by means of a variety of expedients, might send home his first dose of vaccine, it was quite another matter to induce the subjects to come back for more. Nor has this been true in dealing with unintelligent communities only.

Ferran, so far back as 1885, inoculated thousands against cholera in Spain; the work of Haffkine with plague in India is well known; Shiga inoculated against dysentery in Japan, and the more recent work of Lister in South Africa against pneumonia also seems successful. The most pronounced results have been obtained with typhoid-paratyphoid vaccines. The severity of the reactions, however, has been sufficient to make mass application unpopular and therefore impracticable in civilian work.

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[1] Holt, L. E.: Standards for Growth and Nutrition, Am. J. Dis. Child. 16: 359 (Dec.) 1918.

Perhaps the use of lipovaccines will do more to solve the problem than any other factor. Le Moignic and Pinoy were the first to substitute oils for the physiologic sodium chlorid solution previously used in making vaccines, and the advantages of the change were obvious. Bacterial toxins and even endotoxins, to a degree, are lipotropic; and the fact that their toxic effects are inhibited when they are injected simultaneously with lipoids and lipoid-rich tissues, such as brain substance, has been explained on this basis. The lipoid-oil vehicle of the vaccine serves, therefore, not only in delaying absorption but very probably in some directly neutralizing manner. Indeed, Le Moignic and Pinoy found that they could inject three and four times the dose of the usual saline vaccine at a single injection of the lipovaccine without undue reaction and achieve an immunity that was on a par with that obtained following repeated inoculations with ordinary vaccines. The fact that bacterial vaccines prepared in oil do not deteriorate is also of decided value when mass vaccination is under consideration.

A lipodysentery vaccine has already been produced at the Army Medical School, and recently Fennel prepared a lipopneumococcus vaccine which, because of the simplicity of inoculation, will perhaps supersede the method of inoculation recommended by Lister.

An interesting application has been made, too, by Bossan and Le Moignic[1] with a lipotuberculin. They find that such vaccines, containing either the complete suspension of tubercle bacilli or the filtered product of the dissolved material, are efficient as antigens and at the same time quite innocuous, so far as local and general reactions are concerned.

Of course, a number of technical problems have presented themselves in the mass production of these vaccines—matters of dosage and of the proper sterilization of oils, and the inclusion of efficient preservatives and antiseptics (all of our common agents are lipotropic and therefore of lessened bactericidal power in an oil menstruum), and their sale in interstate commerce has so far not been authorized by our government—but there seems little doubt that within a few years the use of lipovaccines will be of great assistance in prophylactic inoculation against a number of infectious diseases, a procedure which so far has been delayed because of the inherent toxicity of the available vaccines.

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[1] Bossan, A., and Le Moignic, E.: Progrès Méd., **23**: 99, 1918.

Habits and Health.—The greater proportion of people are born healthy and their way of living makes them sick. The people of America are only 50 per cent. efficient on account of ill health and disease. Apparently our population is 100,000,000; actually it is only 50,000,000. This is the result of wrong feeding, cranky immoderation, not enough air and sunshine; impure and insufficient water drinking; alcohol, caffein and nicotin addiction, and our awful and absurd use of drugs and patent medicines.—*Bulletin*, Indiana State Board of Health.

Current Comment

CANDY AND CALORIES

With the after-war return of the nation to its normal mode of living, there are evidences on all sides of a relaxation of the strenuousness of the program of conservation. Wheat, meat and sugar are no longer restricted in their distribution in the ways that the voluntary rationing schemes of last year demanded. It is reported that the candy manufacturers, who have been so severely hampered by the necessity of producing sugarless sweets, are preparing for an increase in their business in the near future. We are told that the people of this country are learning that "candy is as healthful as it is delicious," and that "candy has more calories per pound than any of what are regarded as the ordinary dishes served at meals in the American household." Even the low score of caramels with only 1,400 calories per pound exceeds all but corn and rice among the more familiar dietary components; while milk is left quite in the background with a mere 800 calories per quart. We have no quarrel with candy lovers or with manufacturers of delicious sweets. Sugar and nuts and fats which enter into common confections are usually as digestible as they are toothsome. Having succeeded in educating the American public in some degree to the real meaning of calories as measures of food fuel, our experts in nutrition are face to face with a new problem in popular education. The public must now be taught that food values are not expressed in calories alone any more than miles-per-gallon of gasoline are the sole criterion of automobile excellence. A properly selected diet represents the inclusion of many items, some of which are not to be evaluated primarily in terms of calories. Every one ought to appreciate, after the nation-wide propaganda for more milk, that the latter food represents nutrient virtues that put it into the cheap-at-any-price class. The green vegetables contribute factors to our diet that candy can scarcely imitate. Even raw meat proved to be a blessing to Stefánsson[1] with which the choicest "package goods" could not compete when his party was threatened with scurvy during their sojourn in the Arctic regions. It has been asserted that sugar and sweets, though valuable fuel foods, are dangerous for children unless the use of these articles is carefully controlled. Writing in the manual of the United States Food Administration, Dr. Ruth Wheeler[2] states of sweets: "Because of their flavor, it is only too easy to eat too much of them. They are likely to cause digestive disturbances, to take away the appetite for other more valuable foods if eaten at the wrong time, and therefore indirectly to cause anemia and bad teeth. Obviously, they are entirely unbalanced foods, supply only fuel and no building materials in any permanent sense of the word. They must, therefore, supplement and not replace other food. In moderation, as dessert after a good meal, they are in their proper place." This expresses the crux of the matter:

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[1] Stefánsson, V.: Observations on Three Cases of Scurvy, J. A. M. A. **71**: 1715 (Nov. 23) 1918.

[2] Wheeler, Ruth: The Children's Food, The Day's Food in War and Peace, U. S. Food Administration, p. 100.

Everything in its place—including candy. To propose that even the most delicious confection shall replace bread and butter, fruits and vegetables, meat and milk, is preposterous. Let candy rest on its long won laurels.

SMITH, JONES ET AL.

An interesting incident occurred in the recent war as the result of a similarity of names. A physician received orders to report for duty; on arriving at his post he discovered that the order was intended for another man of the same name. He failed in an attempt to recover expenses for travel from the War Department, since it was shown that he had not even applied for a commission. Most interesting is a recent incident in the British Army which the *Medical Officer* entitles "The Mysterious Disappearance of Dr. Herbert Jones." It appears that one of the districts of England had been endeavoring to secure the release from the army of its medical health officer, Lieut.-Col. Herbert Jones. While familiarly known as Herbert Jones, this officer was entered in the archives of his local government board as J. H. Jones. The Joneses fill twenty-eight closely printed columns in the Army List; there were thirty-two H. Joneses and seventeen J. H. Joneses, and there was considerable difficulty in attempting to reach the Jones wanted. In its closing statement the *Medical Officer* says: "It is quite possible that an advertisement in this journal —(the *Medical Officer*)—might catch the eye of one who used to be much interested in public health matters." And then—like the familiar valve-handle wheeze—it adds: "As we go to press we learn that Colonel Jones has been found and has now resumed his civil duties."

EDUCATIONAL INTERRELATIONS WITH MEXICO

In his letter last week our Mexican correspondent referred to the good results of recent visits by parties of Americans to Mexico in the establishing of cordial commercial relations between the two countries. He intimates also that closer relations might exist in intellectual lines, a desire which is most commendable and doubtless shared by the intelligent people of both countries. The plan of exchanging university professors has not as yet been carried out with Mexico and not a great many Mexican students do undergraduate or postgraduate work in the United States. If Spanish were studied more extensively in the United States and English more widely in Mexico, it would develop a better understanding between the two nations. All of these things have been much talked about, as our correspondent points out, but thus far have remained only "beautiful projects." He makes a single exception—the Spanish Edition of The Journal—which he says is the only concrete thing yet realized. Its appeal, however, is mainly to the medical profession and this, our correspondent believes, does not influence sufficiently the ruling, governmental class. The means outlined by our correspondent by which a closer friendship and harmony may be developed between the United States and Mexico deserve careful consideration and definite action on our part. It is reported that already a New York capitalist has offered to donate several million dollars to found an American university in Mexico City provided the Mexican government favors the proposal and that certain conditions can be met. It is said also that President Carranza has heartily welcomed the idea and given assurance that the Mexican government will further the movement in every way possible. It has even been suggested that a loan of $100,000,000 to Mexico by the United States government, to be used in founding schools and colleges, would do much toward solving the so-called "Mexican problem." In times past the universities of this country have exchanged professors with the universities of Great Britain, France and other European countries. It is reported that America and France are planning an exchange of clinical assistants who will be trained in the methods of the other nation in medical practice, philosophy and scientific research. The circle for this exchange of teachers, students, clinical assistants, etc., should be widened so as to include our sister republics. In this way bonds of fellowship, understanding and harmony may be established between the countries of North, Central and South America.

TYPHOID VACCINATION NOT A SUBSTITUTE FOR SANITARY PRECAUTIONS

No one can question the high protective value of typhoid vaccination in the American army. The brilliant results reached are common knowledge. At the same time, the evidence from France reinforces what bacteriologists have suspected for some time—that typhoid vaccination does not afford a protection that is absolute. Massive doses of typhoid bacilli are plainly dangerous, even when ingested by well vaccinated individuals. As in certain other diseases, the sense of security imparted by typhoid vaccination has led some persons to disregard sanitary precautions which might otherwise have been taken. A little knowledge is a dangerous thing. The man who believes that he is protected against typhoid by vaccination may take chances in drinking water from contaminated sources that otherwise he would have avoided. A recent memorandum by the chief surgeon[1] of the American Expeditionary Forces, reprinted in the *Public Health Reports,* points out with much force the necessity for maintaining sanitary regulations for all military organizations, vaccinated as well as unvaccinated. One instance is given of a replacement unit of 248 men reaching England from Camp Cody with nearly 40 per cent. of the men suffering from typhoid. Investigation was thought to indicate that the men were exposed to infection by contaminated drinking water while en route to the port of embarkation in the United States. Other small but relatively severe epidemics have occurred in various units in France. In November, typhoid began to appear more extensively in the expeditionary forces. According to Soper,[2] from September 27 to February 13 there were 821 cases of typhoid and 190 of paratyphoid in the American Expeditionary Forces in France. Apparently a large portion of these were due to the drinking of

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1. McCaw, W. D.: Pub. Health Rep. 34: 605 (March 28) 1919.
2. Soper, G. A.: Engin. News-Rec. April 3, 1919, p. 677.

contaminated water during the fighting in the Argonne. The memorandum by Colonel McCaw, chief surgeon of the American Expeditionary Forces, points out the importance of water contamination and carrier infection in the spread of typhoid fever under the conditions prevailing in France. It is emphasized that vaccination should be regarded only as a partial protection, and should always be reinforced by sanitary measures. In a word, valuable as typhoid vaccination has proved to be, its efficiency does not warrant any relaxation of sanitary precautions. The relatively high resistance of the vaccinated human organism may be overwhelmed by massive doses of typhoid bacilli, and perhaps also by small doses under certain predisposing conditions that increase individual susceptibility in ways not wholly understood.

Association News

VICTORY MEETING

Reduced Fares for Victory Meeting of the American Medical Association, Atlantic City, N. J., June 9-13

The chairman of the Passenger Traffic Committee, Eastern Territory, U. S. Railroad Administration, Mr. C. M. Burt, advises that all special reduced fares have been discontinued, and the resumption of such reductions during the coming summer season is not contemplated. However, summer tourist rates will be in effect to Atlantic City, tickets being sold from May 15 to September 30 with final return limit Oct. 31, 1919. Round-trip fares from Chicago will be $49.02; from St. Louis, $57.96; and from other points round-trip fares will be constructed on the general basis of 90 per cent. of the double one-way fares to Atlantic City, except that if this makes less than double the one-way fare to Philadelphia, then the through fare to Atlantic City will be double the fare to Philadelphia. A similar announcement has also been received at THE JOURNAL office from Mr. W. J. Craig, chairman of the Southern Passenger Traffic Committee.

Those who are planning to go to Atlantic City for the Victory Meeting are urged to consult the local ticket agents at their home town for complete information regarding fares and stop-over privileges available for the trip. Fellows should not leave the determination of the route they desire to take until just before they are ready to start on the trip. The local ticket agents may have to obtain official instructions as well as special tickets from central points, and arrangements should be made in time so that these tickets may be purchased in time for the journey. These local ticket agents will be able to obtain information and advise you concerning circuit routes which may be available and which may permit making side trips in connection with the journey to or from Atlantic City.

Annual Meeting of the Board of Trustees

The annual meeting of the Board of Trustees was held at the Association headquarters, Feb. 7, 1919, all the members being present. The President-Elect and the Speaker of the House of Delegates were also in attendance.

The Editor and General Manager submitted a comprehensive and detailed report which was carefully considered by the board.

COMPLETION OF HEADQUARTERS BUILDING

In addition to much routine business, the board acted on the following matters, which are here reported because of their interest to the membership: The board appointed a committee to consider the advisability of completing the headquarters building, in accordance with plans already adopted. The necessity of providing room for properly housing the employees of the Association and taking care of our increased business, prompted the board to this action. The committee was directed to report back to the board in time so that the board may present this subject to the House of Delegates.

HOSPITAL STANDARDIZATION

The question of hospital standardization was taken under consideration, and as this subject has been especially studied by the Council on Medical Education, the board heard a report from that council on the subject. This report summarized is as follows: When the council was established in 1905, one of its first acts was to define a standard of medical education. This included a requirement that a year be spent as an intern in a hospital. The council found that the majority of the better equipped graduates were voluntarily serving as interns. However, it has constantly been interested in establishing better facilities for this internship, and to this end, has secured certain data concerning hospitals and similar institutions throughout the country. In 1912, the council submitted its first general questionnaire to the hospitals, and the information obtained was verified, so far as this was practical, by inspection of hospitals conducted along with medical schools. In 1914, the council published a provisional list of hospitals which were considered to be equipped in such a manner as to provide acceptable opportunities to their interns. At the annual conference of the council in February, 1915, a preliminary report of the standardization of hospitals was presented. Immediately following this report, a second general survey was undertaken and this was participated in by an advisory committee appointed by the state medical associations. Two of these state committees, those of New Jersey and Pennsylvania, systematically inspected the hospitals of those states, and considerable similar work was done by the committees of other states. A third survey of hospitals is now in progress, the work having been begun in April of last year. The council recommended that, in addition to the use of questionnaires and inspections by the state committees, it is advisable that the hospitals shall be visited and inspected by a representative of that body. The council feels assured that those hospitals which provide acceptable opportunities for intern service, at the same time render an acceptable service to the sick.

The Board of Trustees, being advised that certain members of the Board of Regents of the College of Surgeons were in session on that day, invited these regents to a conference on the standardization of hospitals, making this a special order of business for 3:30 in the afternoon. At that hour the following members of the Board of Regents of the American College of Surgeons went into conference with Board of Trustees: William J. Mayo, president of the College, Rochester, Minn.; Albert J. Ochsner, Chicago; George W. Crile, Cleveland; Frank F. Simpson, Pittsburgh, and Mr. John G. Bowman, director of the College of Surgeons. The director of the college, Mr. Bowman, stated that the plan being followed in connection with the work of standardizing hospitals was centered mainly on case records, clinical laboratories and staff organizations. He said that the work was being carried out by a personal inspection of the hospitals. Dr. William J. Mayo said that it was the desire of the college to bring about a sympathetic understanding and cooperation between that organization and the American Medical Association. He stated that the two organizations had much to gain from cooperation, and that duplication of work should be avoided. It was mutually agreed that Dr. Colwell and Mr. Bowman should keep in close touch with each other on all matters pertaining to hospital work. It was also arranged that another conference be held in Atlantic City at the time of the annual meeting of the American Medical Association and that representatives of other organizations interested in hospital standardization and development be invited to be present.

The question of social and health insurance was discussed in a general way by Drs. Phillips and Lambert.

ELECTION TO EDITORIAL STAFFS AND COUNCIL

The board elected to the editorial staff of the *Archives of Internal Medicine*, Dr. George Dock, St. Louis; to the editorial staff of the *American Journal of Diseases of Children*, Dr. L. Emmett Holt, New York, and Dr. H. F. Helmholz, vice Dr. Frank Churchill, resigned because of removal from Chicago; on the Council of Pharmacy and Chemistry, Drs. C. L. Alsberg, Washington, D. C., Henry Kraemer, Ann Arbor, Mich., and John Howland, Baltimore, each to serve for five years; and Dr. W. W. Palmer, New York, to fill the vacancy caused by the death of Dr. J. W. Long, for a term extending to 1922.

A JOURNAL OF SURGERY

The board decided to establish, as soon as practical, another special journal, on surgery.

PURCHASE OF LIBERTY BONDS

In compliance with the recommendations of the Finance Committee, the board directed the purchase of $30,000 of the Fourth Liberty Loan bonds and set aside $10,000 to be subscribed to the Fifth Victory Liberty Loan.

SECOND MEETING OF BOARD

The Board of Trustees next met on April 18, with all the members present, except Dr. Bert W. Ellis, who was unable to attend; there were also present the President, President-Elect and Speaker of the House of Delegates.

Dr. Phillips reported progress in arranging for the foreign delegates to the coming annual session. The committee of the board having this matter in charge were empowered to act in all matters pertaining to the details in arranging for the Victory meeting.

The board was advised that, according to the action taken at its February meeting, $30,000 of the Fourth Liberty Loan bonds had been purchased, making the total of $115,000 invested by the Association in the several Liberty Loans. On the suggestion of the General Manager, the board directed that a sufficient amount be subscribed to the Victory Liberty Loan so as to bring the total of holdings of the Association up to $150,000.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending April 25, the Medical Corps contained 18,567 officers, a decrease of 178 from the previous week. The Medical Reserve Corps contained 1,687 officers. The total number of medical officers discharged since the beginning of the war is 19,378.

Wounded Severely

The following medical officer has been reported as having been wounded severely: James W. Duckworth, Lieut., M. C., U. S. Army, Martinsville, Ind.

Wounded, Degree Undetermined

The following medical officers have been wounded, degree undetermined: James R. Miller, Hartford, Conn., and Manuel G. Morales, Chicago, Lieutenants, M. C., U. S. Army.

Soldiers' Teeth Good

Reports collected by Captain Huber, divisional surgeon of the 88th Division at Gondrecourt, showed that less than half of the 26,437 men in the division needed dental treatment.

Wounded Slightly

The following medical officers have been reported as having been wounded slightly: Eric A. Abernethy, Chapel Hill, N. C.; Charles Lynn, New York; Lewis A. Moore, Monroe, Wis., and Ernest W. Slusher, Kansas City, Mo., Majors, M. C., U. S. Army; and Benedict Aron, Chicago; Valentine B. Eiler, Titusville, Pa.; Aaron T. Lukins, Pullman, Wash., and Barton B. McCluer, Bon Air, Va., Lieutenants, M. C., U. S. Army.

Blind and Maimed

It is reported from the Bureau of War Risk Insurance, April 10, that there are only 125 cases of total blindness and less than 4,000 amputations of the American Forces engaged in war. Not all of the cases of blindness are declared yet, as permanent. Despite rumors to the contrary, there have been no cases of amputation in which men lost both arms and both legs. More than 500 artificial limbs had been furnished up to April 10.

Weekly Bulletin, A. E. F.

(April 7, 1919)

This bulletin is devoted chiefly to extracts from a typical Weekly Health Bulletin issued by the chief surgeon of the Third Army. Most of the material concerns a report as to the occurrence of typhoid in the Third Army, and the remainder to statistics on venereal diseases with the number of cases coming from each town, when known. Attention is called to the fact that louse infestation still occurs among many of the men, and the advisability of close clipping of all of the body hair is to be seriously considered by the surgeon. It is noted that 10,071 members of the 28th Division were found infested with lice on arrival at Le Mans, all of whom have been disinsected. The weekly review indicates that there has been a decrease in all communicable diseases, except in meningitis and typhoid fever. For the month of March chickenpox, measles and the typhoid-paratyphoid fevers have increased, all other diseases decreasing.

Awards of Military Cross

The following medical officers have been awarded the British Military Cross by King George: Frank MacGregor, Temple, Texas; Harold E. Foster, Castile, N. Y., and James H. Keeling, Albany, N. Y., Captains, M. C., U. S. Army, and Burton Maltby, Liberty, Mo., Lieut., M. C., U. S. Army, and Roy A. Douglass, Huntingdon, Tenn.

Awarded Belgian Cross of War

Guy G. Giffen, Lieut., M. C., U. S. Army, Dayton, Ohio, has been decorated with the Belgian War Cross by King Albert.

Distinguished Service Cross

The following officers have been awarded the distinguished service cross by the commanding general, American Expeditionary Forces, for extraordinary heroism in action in Europe:

WILLIAM D. McLELLAND, first lieutenant, Medical Corps, 304th Sanitary Train. For extraordinary heroism in action near Nantillois and Montfaucon, France, September 29 to October 1, 1918. Lieut. McLelland near Nantillois, displayed untiring energy in bringing in the wounded while continually subjected to machine-gun and shrapnel fire. It was necessary to move the dressing station to some abandoned German dugouts because of the heavy fire, and during the bombardment this station was set on fire and six men killed, but Lieut. McLelland, by his coolness and courage, enabled the speedy evacuation of the wounded.

WILLIS H. KEENAN, first lieutenant, Medical Corps, 369th Infantry, Coshocton, O. For extraordinary heroism in action in the Champagne sector, France, Sept. 26-Oct. 1, 1918. Although suffering from illness, this officer remained on duty day and night throughout the engagement. When his battalion was in reserve, he voluntarily went forward to the assaulting battalions whose surgeons had been evacuated. In the attack on Sechault he exposed himself continuously to intense artillery and machine-gun fire while rendering first aid.

THOMAS EDWARD JONES, first lieutenant, Medical Corps, 368th Infantry. For extraordinary heroism in action near Binarville, France, Sept. 27, 1918. Lieut. Jones went into an open area subjected to direct machine-gun fire to care for a wounded soldier who was being carried by another officer. While dressing the wounded runner, a machine-gun bullet passed through his arms and chest and a man was killed within a few yards of him.

JOHN RAY, captain, Medical Corps, 119th Infantry, Raleigh, N. C. For extraordinary heroism in action near Bellicourt, France, Sept. 29, 1918. Establishing his first-aid station in the front line, he advanced with the infantry. He continued on with the troops, caring for the wounded, until he himself was so badly wounded that he was evacuated. He died from his wounds a few days later.

Distinguished Service Medal

General Pershing has awarded the Distinguished Service Medal to the following named medical officers:

FRANCIS A. WINTER, Brigadier-General, M. C., U. S. Army. As chief surgeon of the lines of communication, American Expeditionary Forces, from June to December, 1917, he organized medical units at the base ports and in camps in France. He established large supply depots from which medical supplies were distributed to the American Expeditionary Forces, and by keen foresight and administrative ability, made these supplies at all times available for our armies.

FRANK C. BAKER, Colonel, M. C., U. S. Army. As commanding officer of Evacuation Hospital No. 6, at Chateau-Thierry from June to August, 1918. Colonel Baker so promptly arranged his hospital under most difficult conditions, and, with great resourcefulness and good judgment, made such use of the inadequate means at his disposal that he was able to receive and evacuate after splendid treatment and in perfect order a large number of wounded from the Marne offensive at a time when that section of France was greatly demoralized.

JOSEPH A. BLAKE, Colonel, M. C., U. S. Army. As chief consultant for the district of Paris, and commanding officer of Red Cross Hospital, No. 2, he efficiently standardized surgical procedures especially in the recent methods of treating fractures. His remarkable talent has materially reduced the suffering and loss of life among our wounded.

GEORGE W. CRILE, Colonel, M. C., U. S. Army, Cleveland. By his skill, researches and discoveries, he saved the lives of many of our wounded soldiers. His tireless efforts to devise new methods of treatment to prevent infection and surgical shock revolutionized Army surgery and met with the greatest success.

GUY L. EDIE, Colonel, M. C., U. S. Army. He was placed in charge of the medical service at Brest at the time when it became the chief port of debarkation for American troops, and at a period when the arrival of tro[illegible] numbers, and with many sick, overwhelmed all [illegible] for their care. By his great resourcefulness he [illegible] the many difficult problems that were presented.

JOEL E. GOLDTHWAIT, Colonel, M. C., U. S. Army, Boston. As a member of the medical corps he has, by his unusual foresight and organizing ability, made it possible to reclaim for duty thousands of men suffering from physical defects. He has thereby materially conserved for combat service a great number of men who would have been lost to the service.

PAUL C. HUTTON, Colonel, M. C., U. S. Army. As chief surgeon of the Paris group from June 2 to July 26, 1918, during which period by his good judgment and untiring energy he provided a hospitalization and evacuation system that insured prompt and excellent care and treatment of the wounded. He furnished the means of saving many lives and provided comfort for the wounded, thereby greatly adding to the morale of the combatant troops of both the American and the French engaged in the second battle of the Marne.

PERCY L. JONES, Colonel, M. C., U. S. Army. He served with marked distinction as commander of the United States ambulance service with the French armies. By the force of his energy, zeal and ability, he brought the units of that service to a high state of perfection. The splendid record held by this service is attributable to his great devotion and untiring effort in accomplishing his tasks.

JAMES R. MOUNT, Colonel, M. C., U. S. Army. Arriving in France with the first American troops he undertook the task of creating a medical supply depot and administering a medical supply service for the American Expeditionary Forces. Using his limited resources with great skill and judgment he displayed unusual talent for organization and laid the foundation of an efficient medical supply service.

ERNEST L. RUFFNER, Colonel, M. C., U. S. Army. He served as surgeon of the intermediate section, services of supply, having under his supervision thirty-nine base hospital units. He performed his strenuous and exacting duties in an unusually efficient manner, displaying rare judgment and professional attainments of the first order.

THOMAS W. SALMON, Colonel, M. C., U. S. Army, New York City. He has, by his constant tireless and conscientious work, as well as by his unusual judgment, done much to conserve manpower for active front line work. He was the first to demonstrate that war neurosis could be treated in advanced sanitary units with greater success than in base hospitals.

ALEXANDER N. STARK, Colonel, M. C., U. S. Army. He served as chief surgeon of the 1st Army during all its offensives, charged with the organization and direction of the medical service, involving the treatment and evacuation of many thousands of sick and wounded under most adverse conditions. In this important capacity he performed his duties with marked ability. With good judgment, furthered by high professional attainments and tireless energy, he solved the difficult problems which arose, prevented much suffering and saved the lives of many among the American and French wounded soldiers.

SANFORD H. WADHAMS, Colonel, M. C., U. S. Army. In his capacity as assistant to the chief surgeon, American Expeditionary Forces, and, later as a member of the general staff, he ably supervised the hospitalization and evacuation activities of the medical corps in advanced areas. By his timely anticipation of requirements he assisted in a marked degree the support of our operations against the enemy.

WILLIAM H. WILMER, Colonel, M. C., U. S. Army, Washington, D. C. As surgeon in charge of medical research laboratories, air service, American Expeditionary Forces, since September, 1918, he has rendered most distinguished service. His thorough knowledge of the psychology of flying officers and the expert tests applied efficiently and intelligently under his direction have done much to decrease the number of accidents at the flying schools in France and have established standards and furnished indications which will be of inestimable value in all future work to determine the qualifications of pilots and observers. The data collected by him is an evidence of his ability, his painstaking care and of his thorough qualifications for the important work intrusted to him. The new methods, instruments and appliances devised under his direction for testing candidates for pilots and observers have attracted the attention and been the subject of enthusiastic comment by officers of the allied services, and will be one of great importance in promoting the safety and more rapid development of aerial navigation.

HENRY BEEUWKES, Lieut.-Col., M. C., U. S. Army. He rendered especially valuable services as inspector of hospitalization of troops in the field. By tireless energy in the performance of his duties he assisted greatly in raising the efficiency of this service and in bettering the facilities for the caring and evacuation of the wounded of our armies.

ERNEST G. BINGHAM, Colonel, M. C., U. S. Army. As chief surgeon of the Paris district he most efficiently directed the coordination of the work of the hospitals and hospital and ambulance trains in the region of the Paris group during the second battle of the Marne. By his untiring zeal and his exact understanding of conditions, he most ably handled the limited hospital resources of the District of Paris, permitting the clearing of the battlefield of the wounded and the proper provision for their care. In all these tasks he showed professional attainments of the highest order, unflagging energy and great devotion to duty.

FRED T. MURPHY, Colonel, M. C., U. S. Army, St. Louis. As director of base hospital No. 21, as supervisor of the evacuation of the sick and wounded of the First Army, and later as director of the bureau of medicine and surgery of the American Red Cross, he rendered most valuable assistance to the American Expeditionary Forces. Throughout his service he displayed unusual administrative ability and professional skill, combined with a genius for organization that contributed greatly to the efficiency of the medical service of the Army. Untiring in zeal and enthusiastic in his duty he was an inspiration to those associated with him.

BURTON J. LEE, Lieut.-Col., M. C., U. S. Army, New York City. As surgical consultant attached to the second division he served continuously at the front, organizing his forces for the treatment and evacuation of the casualties with skill and marked success. He displayed unusual ability in the operations before Soissons when in an emergency he organized, personally led, and directed surgical teams which cared for hundreds of wounded soldiers at a time when adequate hospitalization could not be established.

CHARLES H. PECK, Lieut.-Col., M. C., U. S. Army. As director of base hospital No. 15, which he had organized most efficiently, he displayed unusual skill and very marked ability in the conduct of that unit. Later as senior consultant in general surgery for the American Expeditionary Forces, his professional attainments, wide experience and sound advice proved of inestimable value in increasing the efficiency of the medical department of the United States Army.

ARNOLD D. TUTTLE, Colonel, M. C., U. S. Army. In his capacity as assistant to the chief surgeon, and later, as a member of the general staff, American Expeditionary Forces, he supervised the preparation of hospitalization plans and their execution, and assisted in the evacuation of sick and wounded from the battlefields in such manner as to greatly increase the efficiency of his department.

EMIL H. BURGHER, Major, M. C., U. S. Army. As regimental surgeon of the 138th infantry he supervised the care of the wounded during the Argonne offensive. With untiring energy and ability of a high order, displaying personal courage under shell fire, personally rallying his men and directing them forward, he was an inspiration to all. His dressing station was placed to within a few hundred yards of the front lines, whenever the terrain rendered the passage of ambulances impossible. His zeal, devotion to duty and efficient services added greatly to the morale of all who served with him.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Bessemer—Terry, L. L. (L.)
Madison—Patton, I. W. (M.)

ARIZONA

Bisbee—Darragh, E. (C.)
Keams Canon—Curran, L. H. (L.)

ARKANSAS

Bauxite—Bryant, R. H. (L.)
Greenbrier — Henderson, G. L. (L.)
Little Rock—Kory, R. C. (C.)
Rogers—McHenry, R. R. (C.)
Wilton—Cathey, A. D. (C.)

CALIFORNIA

Alameda—Maine, A. F. (L.)
Berkeley—McIntosh, A. M. (C.)
Dinuba—Tillotson, C. A. (C.)
Dixon—Floreth, O. P. (C.)
Fresno—Burks, F. L. R. (C.)
Los Angeles—Clarke, W. T. (C.)
Hart, L. (C.)
Johnson, C. A. (C.)
Mayne, W. H. (C.)
Riche, E. J. (C.)
Trout, F. M. (C.)
Pasadena—Breyer, J. H. (L.)
Placerville—Reckers, W. A. (C.)
San Diego — Wilkinson, A. J. (M.)
San Fernando—Ward, B. B. (C.)
San Francisco — Emmal, F. S. (M.)
San Jose—Wilson, D. R. (L.)
Santa Maria—Coblentz, L.-B. (C.)
Stockton—Edgerton, A. E. (C.)

COLORADO

Antonito—Shelton, E. K. (L.)
Durango—Richardson, H. L. (C.)
Sterling—Latta, C. J. (C.)

CONNECTICUT

Danbury—Brown, D. C. (M.)
Hartford—Thompson, H. G. (L.)
Waterbury—Leonard, G. A. (L.)

DELAWARE

Wilmington—Speer, W. H. (M.)

DISTRICT OF COLUMBIA

Washington—Brady, J. C. (C.)
Erving, W. G. (M.)
Howard, W. J., Jr. (L.)
Saffold, G. S. (C.)
Snowden, E. (L.)

FLORIDA

Chattahoochee—[illegible] D. (L.)
[illegible]—[illegible], B. L. (C.)
Jacksonville—Pasco, J. D. (M.)
Sarasota—Halton, J. (C.)
Tampa—Mitchell, L. B. (M.)

GEORGIA

Atlanta—Barfield, F. M. (L.)
Barfield, J. R. (L.)
Equen, M. S. (L.)
Fitts, J. W. B. (L.)
Greene, E. H. (L.)
Lawrence, C. E. (L.)
McGee, J. P. (L.)
Mizell, G. C. (C.)
Person, W. E. (C.)
Sauls, H. C. (C.)
Wright, L. T. (C.)
Macon—Massenburg, G. Y. (L.)
Pumpelly, W. C. (C.)
Oakfield—Wall, C. K. (C.)

IDAHO

Driggs—Martin, C. J. (L.)

ILLINOIS

Alexander—Schott, W. H. (L.)
Chicago—Barth, J. J. (L.)
Crowe, T. S. (C.)
Fink, A. H. (L.)
Hall, J. W. (C.)
Holberg, E. A. (C.)
Holmes, W. H. (M.)
Jaros, J. F. (C.)
Kretschmer, H. L. (C.)
Krolick, G. E. (C.)
Martin, H. G. (C.)
O'Connor, D. F. (L.)
Small, C. P. (C.)
Traub, H. W. (L.)
Walker, H. (M.)
Elgin—Hughes, L. J. (C.)
Galesburg—Dawson, J. (C.)
Herrin—Ford, W. H. (C.)
Lombard—Schiele, W. C. (L.)
Loraine—Potter, R. E. (C.)
Murphysboro—Ormsby, O. B. (L.)
Peoria—Spurck, P. T. (L.)
Quincy—Knox, T. B. (C.)
Sutter—Young, J. G. (L.)
Waukegan—Connell, J. A. (L.)

INDIANA

Auburn—Leas, J. A. (C.)
Boonville—Samples, J. T. (M.)
Economy—Loop, A. L. (L.)
Evansville—Johnson, G. C. (C.)
Fort Wayne — Edlavitch, B. M. (L.)
Hammond—Howat, W. F. (C.)
Macy—Peters, R. J. D. (L.)
Muncie—Clauser, E. H. M. (L.)
Rea, C. G. (C.)

[illegible] Medical College

Otwell—Bell, D. W. (L.)
Roanoke—Schultz, E. W. (C.)
Romney—McCay, O. L. (C.)
South Bend—Clark, S. A. (C.)
Traver, P. C. (C.)
Waveland—Ball, T. Z. (C.)

IOWA

Amana—Herrmann, C. H., Jr. (L.)
Cherokee—McNeal, M. D. (L.)
Council Bluffs — Merritt, E. A. (L. C.)
Dixon—Binford, W. S. (C.)
Fort Dodge — Studebaker, J. F. (C.)
Fort Madison — Reimers, R. S. (L.)
Hampton—Meyer, H. E. (C.)
Lime Springs — Plummer, H. W. (C.)
Sioux City — McLaughlin, P. B. (M.)
Waterloo—Hadley, E. B. (L.)

KANSAS

Burlington—Manson, D. W. (L.)
Douglass—Bunten, J. C. (L.)
Eldorado—Earp, R. B. (L.)
Hartford—Nienstedt, W. F. (C.)
Hutchinson—Koch, A. G. (L.)
Junction City — Steadman, L. S. (C.)
Liberal—Nichols, R. T. (C.)
Manhattan—Cave, R. R. (C.)
Moundridge—Ruth, G. D. (L.)
Natoma—Drake, E. A. (C.)
Wichita—Slayton, F. H. (C.)

KENTUCKY

Alexandria—Shaw, C. W. (C.)
Blaine—Osborn, H. C. (C.)
Clintonville—Worthington, W. C. (L.)
Danville—Smith, W. H. (C.)
Hazard—Holloway, T. C. (M.)
Louisville—Collier, T. R. (L.)
Fischer, E. H. (L.)

LOUISIANA

Lake Arthur—Abney, W. R. (L.)
New Iberia—Fulton, E. S. (L.)
New Orleans — Holderith, C. P. (L.)
Shreveport—Hicks, O. B. (L.)
Slidell—Griffith, J. K. (L.)

MAINE

Bangor—McNeal, H. D. (L.)
Lewiston—Hall, L. F. (L.)
Portland—Gilbert, F. Y. (C.)

MARYLAND

Baltimore—Binger, C. A. L. (L.)
Gillis, A. J. (C.)
Reinhard, F. O. W. (L.)
Shipley, A. M. (L. C.)

MASSACHUSETTS

Attleboro—Clarke, J. W. (C.)
Boston—Boardman, W. P. (C.)
Means, J. H. (M.)
Wesselhoeft, C. (C.)
White, P. D. (C.)
Wright, W. S. (C.)
Bridgewater—Hunt, W. E. (L.)
Lancaster—Beckley, C. C. (M.)
North Adams—Overlander, J. E. (C.)
North Attleboro — Bryer, J. A. (C.)
Quincy—Sheahan, G. M. (C.)
Salem—Clark, D. S., Jr. (L.)
Springfield—Naumann, A. A. (L.)
Webster—Plouffe, B. L. (L.)
Westborough — Downing, D. F. (L.)

MICHIGAN

Allegan—Stuch, H. W. (C.)
Baroda—King, L. A. (C.)
Bay City—Slattery, M. R. (C.)
Delton—Cross, M. J. (L.)
Detroit—King, E. D. (L.)
Loney, B. S. (L.)
Lowell—Gotfredsen, H. P. (L.)
Pontiac—Farnham, L. A. (C.)

MINNESOTA

Henderson—Traxler, F. J. (L.)
Minneapolis—Baxter, S. H. (M.)
Chowning, W. M. (M.)
Rochester—Egan, W. J. (C.)
St. Paul—Corniea, A. D. (L.)
Gravelle, J. M. A. (C.)

MISSISSIPPI

Kiln—Allred, W. W. (C.)
Natchez—Mullens, C. E. (L.)
Owen, J. A. (L.)
Potts Camp—Pegram, R. H. (L.)

MISSOURI

Appleton City — Divine, D. G. (L.)
Boonville — Lionberger, J. R. (L.)
Columbia—Myer, M. W. (M.)
Kansas City—Dod, F. L. (C.)
Donaldson, C. O. (C.)
Weinberg, A. (L.)
Wyatt, T. E. (C.)
Lilbourn—Bogard, E. (C.)
Sedalia—Long, F. B. (C.)
St. Joseph—Hall, E. (L.)
St. Louis—Brown, W. K. (L.)
Dixon, E. K. (C.)
Flury, J. A. (C.)
Fox, S. D. (L.)
Rassieur, L. (C.)
Wood, J. B. (L.)

MONTANA

Billings—Balsam, E. G. (C.)
Laurel—Stevens, L. (L.)

NEBRASKA

Auburn—Cline, E. (C.)
Beatrice—Brash, G. H. (C.)
Curtis—Minnick, C. (C.)
Grand Island — Johnson, E. G. (L.)
Hastings—Smith, A. A. (L.)
Lincoln—Harms, C. W. W. (L.)
Oakdale—Torpin, R. I. (L.)
Omaha—Jonas, A. F. (L.)
Venango—Levin, I. H. (L.)
Wilber—Storkan, L. J. (L.)

NEW HAMPSHIRE

Concord—Wilkins, R. (L. C.)
Hampstead—Allen, W. A. (C.)

NEW JERSEY

Cape May Court House — Dix, J. M. (C.)
Elizabeth—Boller, E. O. (L.)
Highland Park — Merrill, C. F. (L.)
Jersey City — Commorato, J. R. (L.)
Newark—Ruskin, A. (L.)
Palmyra—Rarig, H. R. (C.)
Passaic—Ryan, J. N. (C.)
Port Norris—Day, S. T., Jr. (L.)
Princeton—Browne, C. (C.)

NEW YORK

Belmont—Lewis, L. C. (L.)
Brooklyn—Beatty, G. W. (C.)
DeGregori, P. H. (C.)
Rochford, F. M. (L.)
Buffalo—Duryea, H. D. (L.)
Fronczak, F. E. (M.)
Gallagher, J. L. (L.)
Vogt, A. H. (L.)
Central Islip—Vaux, C. L. (C.)
Glens Falls — Haviland, M. L. (C.)
Hudson—Galster, H. C. (C.)
Hudson Falls—Park, O. J. (L.)
Kings Park — Brush, C. H., Jr. (L.)
New York—Baketel, H. S. (M.)
Bookman, A. (C.)
Cash, S. L. (C.)
Cutler, C. W., Jr. (L.)
Gardam, J. W. (L.)
Herrick, W. W. (M.)
Hughes, B. (L.)
Lyttle, J. D. (C.)
MacVean, S. N. (L.)
Newsom, T. C. (C.)
Sharpe, F. A. (L.)
Sichel, C. C. (C.)
Sinclair, D. B. (C.)
Wolf, C. (C.)
Wood, W. G. (M.)
Peekskill—Hart, H. F. (M.)
Poughkeepsie—Plass, E. D. (C.)
Rochester—Miller, H. A. (L.)
Schenectady—Burke, J. E. (L.)
Troy—McShane, W. H. (C.)
Warrensburg — Griffin, J. M. (L.)

NORTH CAROLINA

Raleigh—Noble, R. P. (C.)

NORTH DAKOTA

La Moure—Westley, M. D. (C.)

OHIO

Cleveland—Darby, J. C. (Col.)
Columbus—Rowland, G. A. (L.)
Dayton—McClellan, H. H. (L.)
McKemy, J. W. (C.)
East Liverpool — McCutcheon, M. D. (C.)
Fostoria—Burnett, E. J. (L.)
Fremont—Deemer, W. R. (C.)
Harrison—Swing, F. C. (C.)
Port Clinton—Starkes, C. C. (C.)
True, J. A. (C.)
Toledo—Stone, W. J. (M.)
Xenia—Darnell, W. T. (C.)
Youngstown—Dalbey, R. A. (L.)

OKLAHOMA

Cashion—First, F. R. (L.)
El Reno—Runkle, R. E. (C.)
Muskogee—Thompson, C. A. (M.)
Reed—Pearson, L. E. (L.)
Shawnee—Hughes, J. E. (C.)
Taloga—Gore, V. M. (L.)

OREGON

Astoria—Kinney, A. E. (L.)
Portland—Higgs, A. K. (L.)

PENNSYLVANIA

Bryn Mawr — Earnshaw, H. C. (M.)
Gillespie, G. Y. (L.)
Derry—Lohr, F. D. (L.)
Duquesne—Landis, S. S. (C.)
Edgewood—Moreland, G. B. (C.)
Erie—Hess, E. (C.)
Greensburg—Hunter, R. J. (C.)
Llanerch—Roberts, I. B. (C.)
McKeesport—Itscoitz, S. (L.)
Moon Run—Burkett, J. W. (L.)
New Wilmington—Smyser, C. J. (C.)
Palmyra—Bashore, S. D. (L.)
Philadelphia—Ashurst, A. P. C. (Col.)
Creighton, W. J. (L.)
Davies, J. R., Jr. (L.)
Donnelly, R. T. M. (L.)
Flanagan, A., Jr. (C.)
Lee, W. E. (C.)
McIntire, B. M. (C.)
Richards, J. L. (L.)
Rugh, J. T. (L. C.)
Segal, L. (L.)
Pittsburgh—Hamer, E. E. (C.)
Hartman, C. C. (C.)
Morris, F. S. (C.)
Shillito, N. G. L. (C.)
Reading—Grim, D. S. (L.)
Kaucher, C. L. (C.)
Swiftwater—Slee, R. (L. C.)
Washington—Knox, R. A. (L.)
Parry, R. S. (L.)

RHODE ISLAND

Esmond—Hodgson, J. S. (L.)
Pawtucket—Hess, P. W. (C.)
Kenney, J. F. (L.)
Warren—Merchant, M. H. (M.)

SOUTH CAROLINA

Mayesville—Corbett, H. W. (L.)
Orangebury—Montgomery, B. M. (L.)
Ridgeway—Dobson, J. F. (L.)
Rock Hill—Crawford, R. H. (C.)
Woodruff—Workman, B. J. (L.)

SOUTH DAKOTA

Huron—Leach, W. O. (C.)
Wright, O. R. (C.)
Lead—Clough, F. E. (C.)
Mitchell—Ball, W. R. (C.)
Tyndall—Boon, E. H. (C.)
Veblen—Senescall, C. R. (L.)

TENNESSEE

Chattanooga — Revington, J. H. (L.)
Memphis—Glover, C. H. (C.)
Nashville—Brown, C. W. (C.)
Dake, R. W. (C.)

TEXAS

Austin—McLaughlin, J. W. (C.)
Beeville—Egbert, O. E. (C.)
El Paso — Wesson, M. B., Jr. (C.)
Jewett—Smith, V. L. (C.)
Round Rock—Fowler, F. F. (C.)
Sweetwater—Monk, C. L. (L.)
Temple—Stephens, J. D. (L.)
Texline—Johnson, I. B. (L.)
Waco—Stagner, G. H. (M.)
Wichita Falls — Lee, O. B. (M.)

UTAH

Bingham Canyon — Hageman, P. S. (L.)

VIRGINIA

Danville—Johnson, G. W. (L.)
Ferrell — Caruthers, V. O., Jr. (L.)
Gaylord—Allen, L. M. (C.)
Martinsville — Baldwin, D. O. (L.)
Meadow View—Yokeley, S. H. (L.)
Richmond—Traynham, A. P. (L.)

WASHINGTON

Castle Rock—White, E. W. (C.)
Centralia—Kniskern, E. L. (C.)
Goldendale—Collins, F. H. (C.)
Kelso—Bird, F. A. (C.)
Seattle—Burdick, C. M. (C.)
Fassett, F. J. (M.)
Snow, A. G. (C.)
Spokane—Fursey, F. R. (C.)
Steilacoom—Wilt, F. T. (C.)
Tacoma—LaGasa, J. A. (L.)
Schulz, A. W. (L.)

WEST VIRGINIA

Charleston—Barber, T. M. (L.)
Clarksburg—Halterman, C. W. (C).
McMechen—Rinehart, A. B. (L.)
Summerville—Kincaid, H. C. (C.)

WISCONSIN

Brodhead—Mitchell, E. J. (L.)
Cornell—Beeson, H. B. (C.)
Gilmanton—Smith, A. D. (C.)
Green Bay—Levitas, I. E. (L.)
Madison—Hodges, P. C. (L.)
Milwaukee—Brown, R. C. (L. C.)
Evais, C. A. (L. C.)
Hitz, H. B. (M.)
Lademan, O. E. (C.)
McMahon, F. B. (C.)
Thompson, F. A. (M.)
Racine—Pope, F. W. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Foye, F. A.
Williams, P. M.
San Diego—Thompson, H. A.

CONNECTICUT

Hartford—Lynch, J. F.

GEORGIA

Atlanta—Irvin, I. W.

ILLINOIS

Bloomington—Loar, R. R.
Paris—Myers, A. L.
Springfield—Haskins, H. F.

INDIANA

Evansville—Fritsch, L. E.
Indianapolis—Wood, G. W.

IOWA

Thurman—Cole, H. P.

MASSACHUSETTS

Boston—Alford, L. B.
Cambridge—Peirce, B. H.

MICHIGAN

Ann Arbor—Todd, L. C.
Detroit—Osborn, H. A.
Grand Rapids—Hebard, C. E.
St. Joseph—Martin, F. N.

MINNESOTA

Duluth—McComb, C. F.
Litchfield—Robertson, W. P.

MISSOURI

Webster Groves—Gaston, R. E.

NEW JERSEY

Newark—Mancusi-Ungaro, E.

NEW YORK

New York—Cherry, T. H.
Stevens, A. M.
White Plains—Brush, F. L.

PENNSYLVANIA

Philadelphia—Dever, F. J.
Greco, T. A.
Holmes, J. W.
Lipshutz, B.
Shuster, B. H.
Weber, W. L.

SOUTH CAROLINA

Donora—Anderson, L. W.

TEXAS

Abilene—Hollis, S. W.
Houston—Herndon, R. F.

VIRGINIA

Clifton Forge—Griffith, E. L.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Gordon, Ga., base hospital, from Camp Dix, Major M. A. WATKINS, Birmingham.

To Fox Hills, N. Y., from Camp Dix, Major L. W. GROVE, Tuscaloosa.

The following order has been revoked: *To Camp Travis, Texas*, Lieut. W. W. ROWAN, Alabama City.

Arkansas

To Camp Pike, Ark., base hospital, from Fort Sam Houston, Capt. J. I. SCARBOROUGH, Little Rock.

To Hot Springs, Ark., from Camp Pike, Capt. F. L. CASTLEBERRY, Paragould.

California

To Camp Kearney, Calif., base hospital, from Camp Lee, Capt. T. J. BERGGREN, Coronado.

To report to the commanding general, Western Department, from San Francisco, Col. J. A. MURTAGH.

To Sacramento, Calif., Mather Field, from San Diego, Capt. P. de OBARRIO, San Francisco.

To San Francisco, Calif., Letterman General Hospital, from Camp Kearney, Capt. H. O. VON DER LEITH, San Francisco.

Colorado

To Denver, Colo., from Oteen, N. C., Capt. S. SIMON, Denver.

To Fort McHenry, Md., from Walter Reed General Hospital, Capt. W. A. McGUGAN, Denver.

To Spartanburg, S. C., from Oteen, N. C., Capt. G. H. CATTERMOLE, Denver.

District of Columbia

To Camp Lee, Va., base hospital, from Camp Dix, Lieut. A. M. MacDONALD, Washington.

To Fort Sam Houston, Texas, from Army Medical School, Col. E. B. VEDDER.

To Spartanburg, S. C., from Camp Meade, Lieut. C. B. COVEY, Washington.

Georgia

To Army Medical School, from Camp Gordon, Capt. S. B. GILLESPIE, Willacoochee.

To Camp Gordon, Ga., base hospital, from Fort McPherson, Major E. V. KELLER, Atlanta.

To Fort McPherson, Ga., from Camp Grant, Lieut. C. M. WEST, Atlanta.

Illinois

To Camp Gordon, Ga., base hospital, from Fort Oglethorpe, Lieut. W. H. MILLER, Chicago.

To Detroit, Mich., from Camp Custer, Capt. J. W. CLARK, Chicago.

To Fort Sheridan, Ill., from Camp Dix, Lieut. R. F. ELMER, Chicago.

To Fox Hills, N. Y., from Camp Dix, Capt. S. B. HERDMAN, Taylorville.

Indiana

To Camp Meade, Md., as orthopedic surgeon, from Camp Dix, Major C. C. CRUM, Jeffersonville.

To Denver, Colo., from Camp Taylor, Capt. H. B. COX, Morristown.

Kansas

To Camp Dix, N. J., base hospital, from Fort Benjamin Harrison, Major H. ATKINS, Pratt.

To Fort Sheridan, Ill., from Jefferson Barracks, Lieut. F. A. TRUMP, Ottawa.

To Pittsburgh, Pa., from Jefferson Barracks, Lieut. A. B. OECHSLI, Stockton.

Kentucky

To Camp Sevier, S. C., base hospital, from Jefferson Barracks, Lieut. J. T. MALONE, Jr., Louisville.

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. H. C. WOODARD, Louisville.

Louisiana

To Carlisle, Pa., from Fort Bliss, Major H. P. JONES, New Orleans.

To Washington, D. C., Surgeon-General's Office, from Camp Dodge, Lieut. K. W. KINNEY, New Orleans.

Maryland

To Camp Dix, N. J., from Plattsburg Barracks, Capt. M. LEVY, Baltimore.

To Camp Meade, Md., from Camp Dodge, Capt. O. H. McNEMAR, Odenton.

To Colonia, N. J., from Walter Reed General Hospital, Capt. H. P. MAUCK, Lieut. D. F. ELMENDORF, Baltimore.

To Walter Reed General Hospital, D. C., from Fort Ontario, Lieut. P. PEARLSTEIN, Baltimore; from Hoboken, Major G. A. STEWART, Baltimore.

The following order has been revoked: *To Fort McHenry, Md.*, from Camp Dix, Lieut. C. A. REIFSCHNEIDER, Baltimore.

Massachusetts

To Army Medical School, from Camp Meade, Major A. W. SELLARDS, Boston.

To Camp Dix, N. J., base hospital, from Eastview, Capt. H. E. CARNEY, Boston.

To Fox Hills, N. Y., from Camp Dix, Major T. W. HARMER, Boston.

The following order has been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. G. A. BUCKLEY, Brockton.

Michigan

To Camp Dodge, Iowa, base hospital, from Camp Custer, Lieut. C. R. WALSH, Detroit.

To Camp Kearney, Calif., camp hospital, from Arcadia, Major H. S. BARTHOLOMEW, Lansing.

To Camp Upton, N. Y., base hospital, from West Baden, Capt. P. B. TAYLOR, Detroit.

To Fort Sheridan, Ill., from Camp Custer, Lieut. W. M. BURLING, Grand Rapids.

Minnesota

To Camp Dodge, Iowa, base hospital, from Rock Island, Ill., Major C. H. CLARK, Duluth.

To Fort Snelling, Minn., from Camp Dodge, Capt. F. M. MANSON, Worthington.

The following order has been revoked: *To report to the commanding general*, Southern Department, from San Antonio, Capt. J. C. WILKINSON, Red Lake Falls.

Missouri

To Camp Abraham Eustis, Va., camp hospital, from Pig Point, Va., Lieut. E. V. KRING, St. Louis.

To Camp Dodge, Iowa, as tuberculosis examiner, from Jefferson Barracks, Capt. F. C. ESSELBRUEGGE, St. Louis.

To Camp Zachary Taylor, Ky., from Jefferson Barracks, Capt. G. S. DRAKE, Lieut. J. L. HUTTON, St. Louis.

To Fort McPherson, Ga., from Fort Sill, Capt. T. J. LYNCH, St. Joseph.

To Fort Sheridan, Ill., from Jefferson Barracks, Capt. A. LEVY, St. Louis.

To Fox Hills, N. Y., from Williambridge, Capt. J. F. McFADDEN, St. Louis.

To St. Louis, Mo., from Jefferson Barracks, Lieut. H. J. BLOUNT, Potosi.

Montana

The following order has been revoked: *To Hot Springs, N. C.*, from Camp Zachary Taylor, Lieut. J. E. ARNOLD, Miles City.

New Jersey

The following order has been revoked: *To Camp Zachary Taylor, Ky.*, base hospital, from Camp Dix, Capt. T. S. McCABE, Newark.

New York

To Camp Dix, N. J., as orthopedic surgeon, from Army Medical School, Lieut. C. A. LEE, Brooklyn. *To examine the command* for nervous and mental diseases, from Camp Meade, Lieut. C. E. TUBB, Poughkeepsie.

To Camp Sherman, Ohio, to examine the command for cardiovascular diseases, from Jefferson Barracks, Lieut. C. SHOOKHOFF, Brooklyn.

To Eastview, N. J., from Fort Riley, Capt. W. P. BLISS, New York City.

To Fort Ontario, N. Y., from Syracuse, Capt. E. J. WYNKOOP, Syracuse.

To Fort Schuyler, N. Y., from Camp Grant, Major S. S. PIPER, Elmira.

To Fort Sheridan, Ill., from Jefferson Barracks, Lieut. N. W. GETMAN, Oneonta.

To Fort Snelling, Minn., from Camp Dix, Capt. T. H. SWEETSER, New York.

To Fox Hills, N. Y., from Camp Dix, Capt. W. G. DORAN, New York; from Williamsbridge, Capt. L. E. GRIMBERG, New York.

To Hoboken, N. J., from New York City, Major L. K. GRAVES, Elmhurst; from Surgeon-General's Office, Lieut. R. MALCOLM, Yonkers.

To Lakewood, N. J., from Camp Dix, Lieut. N. M. DINGMAN, New York.

To Otisville, N. Y., from Oteen, N. C., Lieut. W. G. HAYWARD, Jamestown.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Lieut.-Col. C. H. YOUNG, New York.

The following order has been revoked: *To Camp Upton, N. Y.*, base hospital, from Camp Dix, Capt. J. J. PARSONS, Cortland.

North Carolina

To Oteen, N. C., from Otisville, Capt. J. R. WILLIAMS, Asheville.

To Pittsburgh, Pa., from Camp Polk, Capt. E. M. BARNES, Raleigh.

To Spartanburg, S. C., from Camp Gordon, Capt. C. C. ORR, Asheville; from Camp Upton, Capt. C. S. JORDAN, Asheville.

To Walter Reed General Hospital, D. C., from Camp Greene, Lieut. J. J. MOORE.

Ohio

To Camp Zachary Taylor, Ky., base hospital, from Jefferson Barracks, Lieut. R. L. KUNKLE, Piqua.

To Fort Riley, base hospital, from Camp Cody, Capt. W. F. MILLHON, Columbus.

To Fox Hills, N. Y., from Williamsbridge, Lieut. G. H. REEVE, Cleveland.

To Rantoul, Ill., from Hampton, Va., Lieut. J. W. CAINES, Cuyahoga Falls.

To report to the commanding general, Philippine Department, from Camp A. A. Humphreys, Capt. H. S. HAYES, Whitehouse.

To Spartanburg, S. C., from Oteen, N. C., Lieut. A. M. ROSENBLUM, Youngstown.

To Walter Reed General Hospital, D. C., from Philadelphia, Capt. A. CROTTI, Columbus; from Surgeon-General's Office, Major P. D. WILSON, Columbus.

Oklahoma

To Mineola, N. Y., Hazelhurst Field, from Fort Reno, Capt. W. W. D. AKERS, Tyrone.

Oregon

The following order has been revoked: *To Camp Lewis, Wash.*, Lieut. B. R. BROOKE, Portland.

Pennsylvania

To Camp Dix, N. J., to examine the command for nervous and mental diseases, from Lakewood, Lieut. C. E. CASE, Philadelphia.

To Otisville, N. Y., from Camp Abraham Eustis, Lieut. H. P. BLAKE, Walston.

To Pittsburgh, Pa., from Washington, D. C., Lieut. T. F. MOORE, Pittsburgh.

Rhode Island

To Camp Devens, Mass., from Panama Canal, Major G. W. GARDNER, Providence.

To Fox Hills, N. Y., from Camp Dix, Capt. C. A. FARRELL, Westerly.

South Carolina

To report to the commanding general, Eastern Department, from Charleston, Col. T. J. KIRKPATRICK, Jr.

South Dakota

To Fort Des Moines, Iowa, from Camp Dix, Capt. G. G. COTTAM, Sioux Falls.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. N. J. NESSA, Sioux Falls.

Tennessee

To Camp Lee, Va., base hospital, from Colonia, Lieut. C. W. ROBINSON, Memphis.

To Camp Zachary Taylor, Ky., from Camp Shelby, Capt. J. H. McCALL, Huntington.

Texas

To Camp Meade, Md., from Camp Dix, Major W. H. LLOYD, El Paso.

To Camp Travis, Texas, from Camp Zachary Taylor, Lieut. A. D. WAGES, Waco.

To Fort McPherson, Ga., from Fort Worth, Lieut. R. WRIGHT, New Braunfels.

To Fort Sam Houston, Texas, base hospital, from Camp Dix, Major W. F. McMANUS, San Antonio; from Fort McHenry, Capt. M. W. SHERWOOD, Temple.

To Mineola, N. Y., from Houston, Major J. DIBBLE.

To Washington, D. C., Surgeon-General's Office, from Houston, Lieut. H. M. ANDREW.

The following orders have been revoked: *To Camp Meade, Md.*, from Camp Dix, Major J. G. FLYNN, Galveston. *To report to the commanding general*, Southern Department, from Houston, Lieut. D. H. BROOK, Travis.

Utah

To Fort Douglas, Utah, from Camp Lewis, Capt. H. C. JORGENSON, Salt Lake City.

Vermont

The following order has been revoked: *To Camp Sheridan, Ala.*, base hospital, from Camp Dix, Lieut. J. D. THOMAS, Pownal.

Virginia

To Fort Porter, N. Y., from Fort Ontario, Lieut. G. G. HANKINS, Phoebus.

Wisconsin

To Walter Reed General Hospital, D. C., from Fort Ontario, Capt. W. T. KRADWELL, Wauwatosa.

The following order has been revoked: *To Lake Charles, La.*, from Montgomery, Ala., Capt. H. S. STEENBERG, Milwaukee.

Wyoming

To Walter Reed General Hospital, D. C., for instruction, and on completion *to his proper station*, from Jefferson Barracks, Capt. O. P. HAMILTON, Sheridan.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Laboratory Donated.—Dr. Russell M. Cunningham, Birmingham, has donated to the Jefferson County Medical Society his large medical library, which has been installed in the medical section of the public library in the city hall.

Power Company Surgeons Meet.—Surgeons employed by the Alabama Power Company held their annual meeting in Birmingham, April 14, under the presidency of Dr. Benjamin B. Simms, Talladega. About forty members were present at the meeting.

Personal.—Dr. F. Marion Inge, Mobile, was elected president of the World War Veterans at the meeting held in Mobile, April 14.——Dr. Andrew M. Stovall, Jasper, was rescued from drowning in the Mobile River by Capt. Edward Roberts, who has been recommended by the Medical Association of the State of Alabama to receive a Carnegie Medal.

State Association Meeting.—The fifty-second annual session of the Medical Association of the state of Alabama was held in Mobile, April 15, 16 and 17. As Dr. Isaac L. Watkins, Montgomery, the president, was unable to preside because of sickness, Dr. William F. Betts, Evergreen, the first vice president, presided, assisted by Dr. Henry S. Ward, the second vice president. The meeting was a very interesting one and was in the nature of a victory meeting, and most of the papers were by men who had seen military service. A service flag was unfurled commemorating the 603 Alabama doctors (out of a total of 2,400 in the state) who accepted commissions in the Army and Navy. Six gold stars adorned the flag. Proper exercises were held to welcome the returned and to commemorate the dead. Lieut.-Col. James Somerville McLester, Birmingham, who was consultant to the medical staff at Brest, was elected president, and Dr. Walter Stratton Britt, Eufaula, vice president. The association had as its distinguished out-of-state visitors Drs. Joseph Colt Bloodgood, Baltimore, and George W. Crile, Cleveland. The next meeting will be held on the third Tuesday in April, 1920, at Anniston.

CALIFORNIA

Physicians' Licenses Revoked.—On March 21 the California State Board of Medical Examiners revoked the licenses held by Dr. J. Ottis Burnette and Dr. George H. Richardson, both of Los Angeles, on charges of having performed illegal operations.

Chiropractic Bill Twice Defeated.—A bill providing for a separate board for the licensing of chiropractors was defeated in the California legislature on March 26 by vote of 39 to 38. It was reconsidered on April 2 and again defeated, this time by a vote of 42 to 32.

Correction.—The notice of the death of Roy Oliver Thompson, which appeared in The Journal of April 19, page 1175, was incorrect. Dr. Thompson states, and The Journal is glad to announce, that he had a mild attack of influenza in March, 1919, but made a good recovery. Our report of the death of Dr. Thompson was based on a notice which appeared in the Los Angeles *Times*, which was sent to The Journal by the *California State Journal of Medicine*.

Draft Board Members Organize.—Physicians who have served on boards of the selective draft met in Santa Barbara, April 17, and took the preliminary steps toward forming a national organization, the plans of which will be perfected at the meeting of the American Medical Association in June. Dr. Henry P. Newman, San Diego, was selected as president of the association, and Dr. Paul E. Simonds, Riverside, as secretary.

Personal.—Dr. LaVerne C. Wright, Oakland, has returned after nearly a year of Red Cross work in France.——Dr. Henry O. Eversole, Los Angeles, heads the group of Red Cross workers on the British hospital ship, *Madras*, which is carrying the first contingent of Czechs from Vladivostok to Trieste.——Dr. Luther M. Powers has been reappointed health commissioner of Los Angeles.——Dr. Thomas B. W. Leland, Lieut.-Com. M. C., U. S. Navy, San Francisco, has been discharged from the Navy and has resumed his duties as coroner of San Francisco.

State Society Meeting.—At the annual meeting of the Medical Society of the State of California held in Santa Barbara, April 15-17, under the presidency of Dr. Cornelius Van Zwaluwenburg, Riverside, the following officers were elected: president, Dr. Henry A. L. Ryfkogel, San Francisco; vice presidents, Drs. Henry G. Brainerd, Los Angeles, Dudly A. Smith, Oakland; secretary, Dr. Saxton T. Pope, San Francisco (reelected); delegate to the American Medical Association, Dr. Alfred B. Spalding, San Francisco, and councilors, Drs. William H. Kiger, Los Angeles, James H. Parkinson, Sacramento, and Oliver D. Hamlin, Oakland. Del Monte was selected as the next place of meeting

Illegal Practitioners Arrested.—A Portuguese, named Gonsales A. Da Horta, according to a report from Fresno, was arrested on March 28 for practicing medicine without a license. He was released on $200 bail.——A news report from San Francisco states that Dr. Samuel P. Blumenberg was arrested on March 4 on a charge of having performed an illegal operation on a young woman which is said to have caused her death.——An Oakland report states that three Chinese, Fong Wan, Chen Law Sing and Lai King, were arrested by the state medical board for practicing medicine without licenses. They have been released on bail of $300 each.——Dr. T. Leung, a Chinese herbist of Los Angeles, was arrested by the state medical board, according to report, for violating the medical practice act. He was released on bail of $1,500.——Seven Japanese physicians, R. Haruki G. Suzuki, T. G. Nacayama, B. Nakaraha, T. H. Hayashi, John Doe Watanobi and John Doe Ochiai, according to a report from San Francisco, were arrested several months ago on charges of falsifying their examination papers before the state board of medical examiners. The state board discovered that the interpreter who assisted them with their examination papers was making a business of such practice. Bail in each case was fixed at $3,000.

GEORGIA

Long's Portrait Presented to Infirmary.—Dr. Joseph Jacobs recently presented to the Crawford Long Infirmary, on the campus of the University of Georgia, Augusta, a life size portrait of the late Dr. Crawford W. Long, discoverer of surgical anesthesia.

Control of Cancer.—A meeting was held in Atlanta, April 15, at which a campaign was initiated which will be waged by the medical men and club women of the state against malignant disease. Jarrett W. Palmer, president of the Medical Association of Georgia, presided, and the chief address was made by Frederick L. Hoffman, statistician for the Prudential Insurance Company.

State Association Meeting.—At the seventeenth annual session, held in Atlanta, April 16, 17 and 18, 1919, under the presidency of Dr. Jarrett W. Palmer, Ailey, the following officers were elected for the ensuing year: president, Dr. Edward G. Jones, Atlanta; vice presidents, Drs. William H. Hendricks, Tifton, and James M. Smith, Valdosta; secretary-treasurer, Dr. William C. Lyle, Augusta; delegate to the American Medical Association, Dr. Allen H. Bunce, Atlanta; alternate, Dr. Eugene E. Murphy, Augusta. Macon was selected as the place of meeting in 1920.

New County Officers.—At a meeting, April 15, held in Metter, the Candler County Medical Association was organized with Dr. Wallace D. Kennedy, Metter, president, and Dr. Buford B. Jones, Metter, secretary-treasurer.——Murray County Medical Society at its annual meeting at Chatsworth, March 3, elected Dr. Robert H. Bradley, president; Dr. Emmet H. Dickie, vice president, both of Chatsworth, and Dr. James E. Bradford, Spring Place, secretary.——Sumter County Medical Association, at its annual meeting, April 10, at Americus, elected Dr. Taylor Lewis, president; Dr. William S. Prather, vice president, and Dr. Joseph T. Stukes, secretary-treasurer, all of Americus.

ILLINOIS

New Officers.—At the annual meeting of the McLean County Medical Society, held in Bloomington, April 8, Dr. Watson W. Gailey, Jr., Bloomington, was elected president; Dr. Lyford M. Johnson, Arrowsmith, vice president, and Dr. A. Bernice Curry, Bloomington, secretary-treasurer.

Sanatorium to Be Constructed.—It has been decided to locate the DeKalb County Tuberculosis Sanatorium on the Marsh property between DeKalb and Sycamore on a site of 25 acres, which has been purchased for $16,000. The construction of the new institution will begin this summer.

Smallpox in Illinois.—In Kane and DuPage counties it is estimated that there are approximately 400 cases of smallpox. In Aurora alone there are said to be 74 cases. Kane County is reported as having 85 cases, Peoria County 62, Tazewell County 60 cases, Montgomery and Vermilion counties each 20, Madison County 18, and McLean County 15 cases.

Want Representation on Committee.—The Illinois State Medical Society, through its council, on April 16, adopted a resolution setting forth the provision of the civil administrative code for an advisory committee for the registered nurses, consisting of five persons, each of whom is a registered nurse in the state of Illinois, and setting forth further that the medical profession is chiefly concerned in the education, training and employment of nurses, and recommending the enactment into law, of Senate Bill No. 123, and House Bill No. 175, which bills provide for an equitable representation on this committee.

Health Promotion.—The work of organizing Illinois cities for the appropriate observance of health promotion week, from May 11 to 17, is already under way, backed by the enthusiastic support of Governor Lowden, Dr. C. St. Clair Drake, director of the state department of health, Springfield, and Walter D. Thurber, executive secretary of the Illinois Tuberculosis Association. The program includes a general clean-up, the eradication of breeding places for flies and mosquitoes, the holding of special exercises in schools and churches, the staging of community pageants and better baby conferences, and the exploitation of the various activities of the state and local health departments.

Illegal Practitioner Fined.—Arthur Earl Baker of 1212 South Adams Street, Peoria, was arrested by an inspector for the department of registration and education of the state of Illinois and fined $166 for practicing medicine without a license and for violating the pharmacy law. Arthur Earl Baker is the son of the late Dr. R. W. Baker of Peoria, who was a licensed physician in Illinois. Since the death of his father, Arthur Earl Baker has been practicing in Peoria on his father's license. Some years ago he made application for a license to the state authorities, but did not report for an examination. He has kept his father's name on his office door and has answered calls for "Dr. Baker." The son secured a narcotic license from the federal authorities in the name of his father in 1917, and used it in connection with writing prescriptions for, and dispensing narcotics to, his patients. The state authorities turned Baker over to the federal narcotic officials, and his case has been taken up with the Department of Justice at Washington.——Stefan W. Sobolewski of 1111 Marshfield Avenue, Chicago, was arrested by the Department of Registration and Education of the State of Illinois and fined $50 and costs for practicing medicine without a license.——Dr. William F. Bohannon of Peoria was also arrested and fined $25 on the same charge.

Chicago

New Hospital.—This month work will be begun on the addition to the Ravenswood Hospital at North Winchester and Wilson avenues.——A maternity hospital will be erected by the associated catholic charities in celebration of the seventy-fifth year of the creation of the catholic archdiocese of Chicago. The building will cost $100,000 and will accommodate 100 patients.

Violation of Drug Law.—Charged with having sold large quantities of morphin sulphate without a license, in violation of the Harrison Antinarcotic Law, Dr. Frank C. Howard is said to have been arrested, April 24, and held to the grand jury under bonds of $5.000.——George E. Thraites, colored, was arrested, April 16, charged with selling morphin to addicts and is held under bonds of $5,000.

Exchange of Clinical Assistants.—At a joint session of the Chicago Medical Society and Chicago Surgical Society, April 23, a plan was announced for the exchange of clinical assistants by surgeons and physicians of France and the United States. Major Dehelley of the French army opened the subject, and Dr. A. J. Ochsner, Chicago, stated that he had made arrangements for the exchange of clinical assistants with a French surgeon.

Personal.—William H. G. Logan, Col., D. C., U. S. Army, has returned after several months spent in France.——Dean D. Lewis, Lieut.-Col., M. C., U. S. Army, director of Base Hospital No. 13, at Limoges, France, for ten months, has been assigned to special duties at Fort Sheridan, Ill.——Maurice L. Blatt, Major, M. C., U. S. Army, has returned from military service and resumed practice.——Daniel L. Eisendrath, Capt., M. C., U. S. Army, has been released from military service and resumed practice, April 21.——Samuel J. Walker, Major, A. R. C., has been decorated by King Alexander of Greece, for valuable service rendered in relief work.

MARYLAND

Personal.—Dr. William H. Welch of Baltimore has been awarded the gold medal of the National Institute of Social Sciences. The presentation was made formally, in absentia, at the annual dinner of the institute on April 25 by Mr. Theodore Marburg. Dr. Welch is now abroad attending the Red Cross conference at Cannes, France.——Col. George Walker, Baltimore, of the American Expeditionary Forces and a member of the staff of the Johns Hopkins Hospital, is now attending the conference at Cannes, called by the committee of the Red Cross societies, which convened April 1.——Lieut.-Col. Lewis J. Rosenthal of Baltimore has returned home after twenty-three months' service overseas.——Major Alexander D. McConachie of Baltimore has arrived with Base Hospital Unit No. 202, from Brest, and is now with this unit at Camp Merrit, N. J.

Meeting of the Medical and Chirurgical Faculty.—At the one hundred and twenty-first annual meeting of the Medical and Chirurgical Faculty of Maryland, held April 22, 23 and 24, the following officers were elected to assume office Jan. 1, 1920: president, Dr. James E. Deets, Clarksburg; vice presidents, Drs. Arthur M. Shipley, Thomas R. Boggs and E. F. Jones; secretary, Dr. John Staige Davis (reelected); treasurer, Dr. Charles E. Brack; delegate to the American Medical Association, Dr. Randolph Winslow, Baltimore, and alternate, Dr. Lewellys F. Barker, Baltimore. An interesting program was given on the evening of the 24th, military night, when Major-Gen. Merritte W. Ireland, Surgeon-General of the U. S. Army, addressed the meeting and discussed the war problems that his department had met. He was followed by Brig.-Gen. Francis A. Winter, commandant of the Army Medical School, who told of the work of the medical department in the line of communication of the American Expeditionary Forces. Recent developments of war surgery were discussed by Brig.-Gen. John M. T. Finney, Baltimore, who did notable work abroad, while Brig.-Gen. William S. Thayer, Baltimore, described his observations on the practice of medicine in connection with the American Expeditionary Forces. A notable incident at the opening of the sessions was the sending of a cablegram to Sir William Osler at Oxford, England, felicitating him on the approach of his seventieth birthday. Dr. Osler was a former president and ardent worker for the faculty. The final session was devoted to clinics at U. S. Army General Hospital No. 2, Fort McHenry.

NEBRASKA

New Hospital.—The bill in legislature providing for the erection of a hospital at the Soldiers and Sailors Home, Milford, at a cost of $100,000, has been recommended for passage.

Roentgenologists Meet.—The annual meeting of the Omaha Roentgen-Ray Society was held in Omaha, April 5, under the presidency of Dr. Anders P. Overgaard, Omaha. About 300 were in attendance and in addition to the program of papers, roentgen-ray clinics were held at St. Joseph's Hospital by Dr. Albert F. Tyler, Omaha, and at the University of Nebraska Hospital by Dr. Carl H. Ballard, Omaha. The evening session was devoted to the hearing of experiences from members who had served abroad.

Personal.—Dr. Charles Rosewater, Omaha, who has been seriously ill with pleurisy is convalescent.——Robert D. Schrock, major, M. C., U. S. Army, Omaha, one of the pioneer American surgeons in army service in France, has returned and is on duty at the Post-Graduate Hospital, New York City, in the orthopedic service.——Dr. Frederick A. Sedlacek, Omaha, has started for Siberia as a member of the Red Cross unit.——Dr. John H. Morrow, Merna, who underwent operation in an Omaha hospital recently for appendicitis, is reported to be in a serious condition.

NEW HAMPSHIRE

Personal.—Russell Wilkins, Major, M. C., U. S. Army, Concord, who is now on duty in France with the twenty-Sixth Division, has been promoted to lieutenant-colonel, M. C.——Dr. John H. Neal has been elected city physician and a member of the board of health of Portsmouth.

Hillsborough County Physicians Meet.—At the annual meeting of the Hillsborough County Medical Association, April 15, Charles E. Congdon, Major, M. C., U. S. Army, Nashua, at present in service in France, was elected president; Dr. Clarence O. Coburn, Manchester, vice president, and Dr. Timothy F. Rock, Nashua, secretary-treasurer (reelected).

NEW YORK

Personal.—Dr. W. T. Barger, Katonah, has gone to Vladivostok, Siberia, in the service of the American Red Cross.

State Society Meeting.—The one hundred and thirteenth annual meeting of the Medical Society of the State of New York will be held May 6 to 8, in Syracuse, under the presidency of Dr. Thomas H. Halsted, Syracuse.

New York City

Efficiency and Sanitation.—The address before the New York Academy of Medicine at its stated meeting, May 1, was delivered by Col. John R. Murlin, U. S. Army, on "Efficiency and Sanitation in the Feeding of the United States Army."

Personal.—Dr. Foster H. Kennedy, Keeneyville, N. Y., late major in the Royal Army Medical Corps, British Expeditionary Forces, has returned to this city and resumed his practice.——Dr. James T. Pilcher has been mustered out of service with the United States Army and has resumed his practice in Brooklyn.——Dr. John L. Baker, Brooklyn, has been elected first vice president of the Fulton Street Board of Trade.

State Narcotic Commission Begins Work.—The New York City branch of the state narcotic commission has opened offices in the Health Department Building and announces that narcotic clinics will be opened in this city and throughout the state, one having already been opened at Albany. The New York City health department will not open any more drug clinics, but will continue the work of the clinic recently established at 145 Worth Street. In the short time that this clinic has been in operation it has treated 3,931 patients, an average of 700 a day.

NORTH CAROLINA

Boards of Trustees Consolidated.—At the recent session of the legislature, the special boards of trustees for the different state hospitals were abolished and a single board of eleven members was created. Of these, two are clergymen, two editors, one woman, and a banker and five business men. No physicians were appointed on the board. At its meeting for organization at Raleigh, Joseph G. Brown, Raleigh, was elected chairman, and R. R. Clark, Statesville, secretary.

State Hospital Association Meeting.—The annual meeting of the North Carolina State Hospital Association was held in Pinehurst, April 6, under the presidency of Dr. Jacob F. Highsmith, Fayetteville. An earnest effort is being made by the organization to standardize the hospitals of the state and their schools for training. The following officers were elected: president, Dr. John P. Munroe, Charlotte; vice presidents, Drs. J. T. Burrus, High Point, and Elijah T. Dickinson, Wilson, and secretary-treasurer, Dr. John Myers, Charlotte.

State Board Salaries.—At the annual business meeting of the state board of health the payment of salaries on the following basis was arranged: secretary, $5,000; director of hygiene laboratory, $4,000, with an increase of $50 each year, up to a salary not to exceed $4,500; chiefs of bureaus, expending less than $25,000, a salary of $2,500, with an increase of $50 each year, to a maximum salary of $3,000; and chiefs of bureaus expending over $25,000, a salary of $3,000, with an increase of $50 for acceptable services, up to a maximum of $3,500.

State Society Meeting.—The sixty-sixth annual session of the Medical Society of the State of North Carolina was held at Pinehurst, April 15 to 17, under the presidency of Dr. Cyrus Thompson, Jacksonville, the subject of whose address was "Art of Living." It was decided to hold the next meeting at Charlotte, and the following officers were elected: president, Dr. Carl V. Reynolds, Asheville; vice presidents, Drs. Herbert D. Walker, Elizabeth City, F. Stanly Whitaker, Kingston, and Thomas I. Fox, Franklinville; secretary-treasurer, Dr. Benjamin K. Hays, Oxford, and delegates to the American Medical Association, Dr. Chase P. Ambler, Asheville, and Hubert A. Royster, Raleigh

Personal.—William L. Dunn, Lieut.-Col., M. C., U. S. Army, Asheville, has returned from service overseas, and resumed practice.——Dr. Percy Ahrons, Raleigh, has been elected health officer of Wake County.——Charles O'H. Laughinghouse, Lieut.-Col., M. C., U. S. Army, Greenville, who recently returned to the United States, was presented with a gold hunting case watch, by members of his Base Hospital Unit No. 85.——John T. Burrus, Lieut.-Col., M. C., U. S. Army, High Point, who commanded a base hospital at Camp Beauregard, La., has returned home.——Drs. Cyrus Thompson, Jacksonville, and Fletcher R. Harris, Henderson, have been reelected members of the state board of health for terms of six years.

Health Officers Meeting.—The ninth annual session of the North Carolina State Health Officers Association was held in Pinehurst, April 14, under the presidency of Dr. J. Rufus McCracken, Waynesville, whose address was on "What the State Is Doing for Its Unfortunate." Dr. James A. Keiger, U. S. P. H. S., spoke on the venereal disease work, and Dr. Watson S. Rankin, Raleigh, secretary of the state board of health, reviewed the "Control of Diphtheria." The afternoon session was held in the Eureka Farm Life School, and at the evening session Charles O'H. Laughinghouse, Lieut.-Col., M. C., U. S. Army, Greenville, spoke on overseas observation of public health. Dr. Everett F. Long, Lexington, was elected president; Dr. Carl V. Reynolds, Asheville, vice president, and Dr. George M. Cooper, Raleigh, was reelected treasurer.

PENNSYLVANIA

Personal.—Dr. George K. Strode, Harrisburg, has been appointed assistant chief health inspector of the department of health of Pennsylvania.

Osteopath Bill Defeated.—The Goehrings bill giving osteopathic practitioners the same authority in hospitals as medical men was defeated in the house, April 22, 126 by 23.

Quarantine Laws to Be Revised.—Dr. Edward Martin, state commissioner of health, proposes sweeping changes in the present quarantine laws. General revision of the quarantine laws will be introduced in the legislature during the coming week. Defects in the present laws were apparent during the recent influenza epidemic and the proposed act offers a means of preventing a reoccurrence of such conditions as occurred in Pittsburgh and Lancaster last fall. The new act will give the department of health the needed authority to cope with all contagion, as considerably more power is vested in the commissioner and the advisory board. There will also be a drastic act making it a misdemeanor to transmit social diseases and the health authorities will be given permission to send to detention hospital chronic carriers of such disease. Endorsement is also given to a bill prohibiting publication of advertisements of venereal disease cures.

Philadelphia

Personal.—Lieut.-Col. William E. Ashton, M. R. C., who served with the Three Hundred and Ninth Field Artillery through all the operations of the first army, has returned and is at Camp Dix awaiting discharge.——Major Henry C. Earnshaw, M. R. C., who served twenty-two months in the Army, first with Base Hospital No. 10 and then with American Sixth Army Corps as a medical consultant, has returned to his home in Bryn Mawr.

TENNESSEE

Donation to Meharry College.—The Carnegie Foundation and the general education board of the Methodist Church have each offered a gift of $150,000 to the Meharry Medical College, Nashville, conditioned on the raising of an additional $200,000 by the Freedmen's Aid Society of the Methodist Episcopal Church and the trustees and friends of the college, the latter fund to be used for endowment only.

Personal.—Perry C. Wilkes, for several years superintendent of the Baptist Memorial Hospital, Memphis, has been promoted to chief manager of the institution, and Sidney G. Davidson of the Good Samaritan Hospital, Philadelphia, has been appointed his successor.——Dr. William E. McCampbell, Nashville, was seriously injured when his automobile was overturned, March 20. He sustained fracture of the clavicle and of several ribs.

State Association Meeting.—The eighty-sixth annual meeting of the Tennessee State Medical Association was held in Nashville, April 8 to 10, under the presidency of Dr. Richmond McKinney, Memphis, and the following officers were elected: president, Dr. Andrew F. Richards, Sparta; vice presidents, Drs. Julius C. Brooks, Chattanooga, Nicholas S. Walker, Dyersburg, and Albert W. Harris, Nashville; secretary, Olin West, Nashville, reelected, and treasurer, Dr. Joseph F. H. Gallagher, Nashville reelected. Chattanooga was named as the next place of meeting.

Hospital Items.—The county court of Madison County at an adjourning session, April 13, appropriated $1,000 for the maintenance of a civic league hospital, Jackson, the city giving a like amount.——Excavation work has commenced on the Methodist Hospital, Memphis, which is to be erected at a cost of $350,000. The corner stone will probably be laid late in May.——Giles County is about to issue $25,000 in bonds to secure money with which to build a hospital in the county as a memorial to the men who served in the European war.——An addition is to be built to the Baptist Memorial Hospital, Memphis, to cost about $250,000. This addition will house a nurses' training school and home.——The new Protestant Hospital, Nashville, was opened to receive patients, March 22. The institution has been built at a cost of $250,000 and will accommodate 100 patients.

CANADA

Osteopath Bill Rejected.—The bill the osteopaths submitted, or intended to be submitted to the Quebec legislature, did not reach that body, for it was thrown out in committee. The medical profession took the stand that osteopaths should qualify under the same conditions necessary for all specialists to obtain legal recognition.

Association News.—The eighth annual meeting of the Canadian Public Health Association will be held in Toronto, May 26 to 28, and it will be a joint congress with the Association of the Officers of Health in Ontario.——The annual meeting of the Canadian Medical Association will be held in Quebec City, June 25 to 27. Dr. Jasper Halpenny, Winnipeg, will deliver the address in surgery.

Hospital News.—A home for the deaf and dumb has been decided on by the Manitoba government. The cost will be $500,000, and it will be located in Winnipeg.——Saskatchewan will shortly commence the erection of another hospital for the insane in the southern part of the province. The cost will be $250,000, and $155,000 has also been set apart for additional buildings at the existing hospital for the insane at Battleford.——The total cost of the sanatorium to be built by the dominion government and the government of Alberta near Calgary will be $460,000, of which the dominion government will pay $260,000. The entire plant will become the property of the province in five years.

Ontario Medical Council Bill.—A bill to provide for the reorganization of the Ontario Medical Council has been introduced into the Ontario legislature. It will provide for an advisory medical committee to deal with all questions affecting the practice of medicine in that province. By this new measure the council will be composed of a member from the University of Toronto, in addition to two named by the senate thereof in lieu of affiliated Trinity and Victoria colleges; one each from Queen's, Ottawa, and Western universities, and every university, college or body in Ontario that may hereafter be authorized to grant degrees in medicine and surgery; two members elected by the licensed practitioners in homeopathy; and eight members elected by registered members of the profession other than those mentioned above. This will provide for eight new electoral districts. All regulations of the council are hereafter to be subject to the approval of the government, and the latter has power to overrule the decisions of the council, which might refuse registration to graduates to any university, college, or other body in Canada having power to grant certificates of qualification for the practice of medicine. The council will have power to suspend a member for any period deemed proper. The Advisory Medical Committee shall consist of three members appointed by the government. This committee will have extensive powers, including the consideration of proposed legislation, regulations, by-laws, relating to medical education, the inquiry into the progress of medical education in Ontario and elsewhere, the recommendation of courses of study, clinical work, scientific research, etc., and also the investigation of new drugs, methods of treatment, etc., and the conducting of experiments and tests thereon. This act is to come into force, July 1, 1919.

LATIN AMERICA

Medical Teaching in Honduras.—During the year 1918, among the students graduated in the Republic of Honduras were six physicians, three druggists and two dentists.

Medical Students in Peru.—According to the report of the rector (president) of the University of Lima for the year 1918, there were in that year 1,471 students at the university, 567 of whom belonged to the school of medicine.

Hospital Physicians Organize in Lima.—There has just been organized at Lima, Peru, an association of hospital physicians, the officers of which are Dr. E. Odriozola, president, and Drs. J. Arce, C. A. Bambarén and C. A. Zevallos.

Mortality in Lima.—For the first time in a number of years, during the year 1918 the deaths exceeded the births in Lima, Peru, the numbers being respectively, 6,575 and 6,271. The disease which caused most deaths was tuberculosis.

Additions to Hospitals in Brazil.—At the Hospital Portugués of Recife, one of the oldest hospitals in Brazil, there are now in process of construction important additions which will provide the institution with new operating rooms, laboratory, etc.

Quarantine Stations in Venezuela.—According to recent presidential decrees in Venezuela, there will soon be begun the construction of an isolation hospital in the vicinity of Caracas and of two quarantine stations at the two ports of La Guayra and Puerto Caballo.——The president has just approved the vaccination regulations adopted by the national bureau of hygiene.

Reorganization of the Board of Health of Ecuador.—By a recent decree issued by the president of Ecuador, the supreme board of health is reorganized into five divisions, namely, (1) bacteriology, vaccination, and inoculation; (2) sanitation of ports and boundaries, epidemics and epizootics; (3) departmental and municipal hygiene; (4) sanitary engineering, statistics and legislation; (5) legal. The board is composed of Dr. Juan C. Segovia, president, and Drs. R. V. Castro, S. Calderón, P. S. Fonseca and L. Montalvo.

Sanitation in Haiti.—According to the report just rendered by the chief of sanitation of Haiti, Dr. M. T. McLean, the reorganization of the sanitary service in Haiti begun in August, 1915, by several physicians of the U. S. Navy, has made satisfactory progress. The sanitary conditions have improved remarkably, especially in the north and south; there are three hospitals doing very good work, a satisfactory garbage system is in operation at the capital, and it is expected that, as soon as the financial situation permits, universal vaccination, and the segregation of lepers may be enforced.

Reorganization of the Health Service in Chile.—On Jan. 1, 1919, a law went into effect in the Republic of Chile providing for the reorganization of the health service which is to be hereafter under a director general of health to be appointed by the president from a list of eligibles presented by the scientific bodies of the republic. There will also be an advisory council of hygiene and an institute of hygiene. There is also to be established a system of regional sanitary service in charge of zone sanitary inspectors, who must be graduates of medicine and must have had at least three years of practice. The first director of public health is Dr. R. Colbarán Melgarejo.

GENERAL

Roentgenologists to Meet.—The twentieth annual meeting of the American Roentgen-Ray Society will be held in Saratoga Springs, N. Y., September 3 to 6, under the presidency of Dr. David R. Bowen, Philadelphia.

Meeting Postponed.—The secretary of the American Public Health Association announces that the annual meeting of this association at New Orleans, which was to have been held October 6 to 9, will be held October 27 to 30.

Health Conference.—A meeting of the health officials of Alabama, Louisiana, and Mississippi was held at New Orleans, April 12, at which the chief topic of discussion was coordination of health activities in the three states.

Flight Surgeons to Meet.—The annual meeting of the National Association of Flight Surgeons, which includes all medical officers in air service of the United States Army, will be held in Atlantic City, N. J., during or immediately preceding the meeting of the American Medical Association.

Sanitarians to Meet.—The seventh annual meeting of the Southeastern Sanitary Association, composed of physicians and sanitarians of the states of Virginia, the Carolinas, Georgia, Tennessee, and Florida, will be held in Rome, Ga., May 13, under the presidency of Dr. Romulus L. Carlton Winston-Salem, N. C.

Luminal Now Available to Physicians.—The Committee on Synthetic Drugs of the National Research Council announces that Luminal is being distributed by authority of Mr. Francis P. Garvan, Custodian of Alien Property and president of the Chemical Foundation by arrangement between Merck & Co. and the owners of the Bayer Co. Physicians interested who cannot secure it from local dealers should communicate with the Bayer Company or with the Chemical Foundation, 110 West Forty-Second Street, New York City.

Society for Epileptics to Meet.—The National Association for the Study of Epilepsy, which is affiliated with the International Liga contra l'Epilepsie, and whose object is to promote the pathologic, therapeutic, social and medicolegal study of the epilepsies, will hold its annual meeting at the Craig Colony for Epileptics, Sonyea, N. Y., June 6 and 7, under the presidency of Dr. William T. Shanahan, Sonyea. The program will be carried out in the three aspects of scientific medical, social and institutional, and interspersed will be clinics and demonstrations of the colony régime by members of its medical staff.

Conference of Social Work.—The forty-sixth annual meeting of the National Conference of Social Work, will be held at Atlantic City, June 1 to 8, under the presidency of Miss Julia C. Lathrop, Washington, D. C.. The chief theme of the conference division on health is to be "Health and Standards of Living," and will be considered under the following topics: housing, family food supply, tuberculosis, medical and nursing care, infant mortality, industrial hazards, and venereal disease. Drs. William H. Welch, Baltimore, and Luther Emmett Holt, New York City, will participate in a discussion of the new health program of children for school aid. Other topics for discussion are: illegitimacy, day nursery, the girl problem, public aid for mothers, handicapped soldiers, state care of mental disease, and health insurance.

Bequests and Donations.—The following bequests and donations have recently been announced:

Rush Hospital for Consumption and Allied Diseases, Philadelphia, $3,000; publication-fund of the College of Physicians and Surgeons, Philadelphia, the Mutual Aid Association of Philadelphia, and County Medical Society each $500, by the will of the late Dr. James Tyson.

Jewish Hospital for the maintenance of a home for aged and infirm, and the University of Pennsylvania the residue, after the payment of bequests, for the establishment, maintenance and equipment of a ward in the hospital as a memorial to her husband, Abraham H. Wolfe, for the benefit of persons supposed to be incurable, by the will of Merriam H. Wolfe. In the event of the failure of the trustees of the University of Pennsylvania to accept this gift within a period of three months, the fund reverts to the Mount Sinai Hospital for the same purpose.

For the erection of a hospital in Baltimore, one third of the estate valued at nearly $5,000,000 of Thomas O'Neill, Baltimore.

Maternity Hospital, to stand as a memorial to the testator's wife, Alice T. Lanning, $40,000, and the Lanning residence to the Mary Lanning Hospital Trust to be used perpetually for the benefit of the Mary Lanning Memorial Hospital as a home for nurses, and $10,000, the interest of which is to be used in keeping in good repair the Lanning residence and lot, by the will of W. H. Lanning.

Agatha Hospital, Clinton, Iowa, $200,000 for the erection of an addition to the hospital in memory of her mother, Mrs. Jane Lamb, a donation from Mrs. Young. The hospital will hereafter be known as the Jane Lamb Memorial Hospital.

Clarence Barker Memorial Hospital, Biltmore, N. C., $50,000 by the will of Mrs. Virginia Purdy Bacon.

Conference on Child Welfare.—The Children's Bureau of the United States Department of Labor has arranged for a series of conferences on child welfare to be held in various sections of the United States during May and June. The conferences will be preceded by a meeting at Washington during the week of May 6 which will be attended by the foreign guests, and a small working committee of American experts and members of the staff of children's bureau. Among the foreign guests expected are Sir Arthur Newsholme, chief medical adviser of the British Local Government Board, who has been largely responsible for the work resulting in lowering of the infant death rate during the war; R. C. Davison of the Juvenile Labor Exchange, London; Mrs. Eleanor Barton of the Woman's Cooperative Guild, an organization of the British workingmen which has helped to secure increased national protection for mothers and babies; Mlle. Valentine Thompson, chief of la vie féminine; Monsieur Pierre Hamp, of the French Ministry of Labor and a well-known authority on education and child labor; Dr. C. Mulon, who was in charge of the crèches maintained by the French government during the war for the children and women employed in the munitions factories, will present the French experiences in child welfare work, and the Belgian representatives will be Dr. René Sand, professor of social and industrial medicine in the University of Brussels, and Mme. Henri Carton de Wiart, who has been much concerned with the care of Belgian refugee children during the war.

FOREIGN

German Deaths from Influenza.—According to estimates made in articles published in German medical journals of recent date, 400,000 deaths have been caused by influenza in Germany during the last eighteen months.

Ducrey Called to Rome.—Prof. A. Ducrey of the chair of skin diseases and syphilis at the University of Genoa has been called to Rome to the similar post left vacant by the death of Professor Campana. Besides the discovery of the streptobacillus of chancroid, Ducrey has published numerous works on various skin diseases.

Urologists Organize in France.—The urologists of Paris and the provinces have recently organized the Société d'Urologie, with Guyon as honorary president; Legueu, president for 1919; Carlier of Lille vice president, and Nogués secretary. Meetings are to be held monthly, except during August, September and October, at the hôpital Necker.

Congress of Medical History.—It is reported that a congress on the history of medicine is to be organized for 1920 at Antwerp. This is to do honor to the fiftieth professional anniversary of Dr. Broecke, the first medical historian of Belgium, and at the same time to celebrate the three hundredth anniversary of the foundation of the "Medical Circle" of Antwerp, which dates from 1620.

Warning Against Medical Career.—The *Nederlandsch Tijdschrift* quotes a Munich exchange to the effect that the Leipziger Verband has issued an appeal to the pupils in the preparatory schools warning them against selecting the medical profession on account of the present outlook for physicians. It advises them to take up some other career, possibly the study of dentistry rather than medicine.

Medical Missionaries in Prison.—Four American medical missionaries in Seoul, Korea, Drs. John Thomas, C. R. Avison, J. I. Ludlow, and J. W. Herst, are reported to have been arrested by Japanese, about April 9, in connection with the Korean revolution early in April. The gendarmes took from the Severence Hospital at Seoul, three Korean patients suffering from gunshot wounds inflicted by the police. The state department is investigating this incident.

Medical Unity for Turkey.—The American Women's Hospital, which is maintaining a hospital at Luzancy, France, a chain of dispensaries in the Soissons and Chateau-Thierry region, and a hospital in Serbia in conjunction with the American Red Cross, has started a campaign to raise $250,000 to be spent in the Near East. A unit of six doctors has been selected who will be stationed in Aleppo. They will be the first women to be put in charge of a hospital in the Turkish domain.

Death of Hallopeau.—One of the masters who have made French dermatology famous, Prof. H. Hallopeau, has just died, aged 77. It was expected that he would be the logical successor of Fournier after the death of the latter, but he missed it by the merest chance, and had the title only of *professeur agrégé* until his retirement. He first described several forms of skin disease, notably dermatitis vegetans, and his research on the abortive treatment of syphilis, his works on leprosy, and his treatises on dermatology and general pathology have carried his name far. Visitors to the hôpital Saint-Louis long remember his kindly and distinguished appearance. Since his retirement on reaching the age limit he has been devoting himself to the care of the paupers in the Maison départementale at Nanterre until his sight gave out.

BUENOS AIRES LETTER

Buenos Aires, March 29, 1919.

Inauguration of the School Years

The courses of the school of medicine began on March 20. The dean, Dr. Julio Méndez, read an address expressing his views in regard to medical teaching. Because of certain criticisms of the behavior of professors he was asked for an explanation, and a motion was presented to the board of directors of the school for an investigation of the matter, but the dean stated that his remarks were of a general character and had no application to the staff of the medical school of Buenos Aires.

Closing of the Port of Bahía Blanca

In the Cámara de Diputados (house of representatives) there was some discussion apropos of the closing of the port of Bahía Blanca, the third in importance in the country, by the national department of hygiene, which does not have at that harbor the necessary materials for the disinfection of ships engaged in foreign commerce. The criticism is based on the fact that it does not seem very good policy to close the harbor for the lack of a few stoves and create serious disturbances to commerce at the very moment when the port of Buenos Aires is closed because of a strike.

Influenza

Some patients with influenza have again arrived on ships from Europe, and there have appeared a few small foci in the city of Buenos Aires, but so far no epidemic has occurred.

The Sociedad Médica Argentina

This organization, which is the most important medical society of the country, has just installed itself in a beautiful building of its own, located at number 1171 Santa Fe Street.

The Asistencia Publica

The Asistencia Pública of Buenos Aires is in charge of the treatment of patients in the capital and also of many patients from other parts of the country. The municipal budget proves therefore occasionally inadequate, especially now when the new budget has not been approved. To obviate this inconvenience and collect funds for the maintenance of the hospitals, there has been formed a commission to obtain voluntary subscriptions and gifts of objects which will be auctioned for the same purpose.

Second Antituberculosis Conference

During the next month of September, there will take place in the city of Rosario the second antituberculosis conference, the organization of which is in charge of a commission presided over by Dr. Clemente Alvarez. The work performed by the commission indicates that the conference will meet with success, and it has already been decided to give popular lectures and to hold an exhibition, which has been offered all possible support by the national and provincial governments, the large municipalities, the national department of hygiene, and the five antituberculous leagues in existence in this country.

Poisonings by Star Anise

During the last four months there have been numerous cases of poisoning in children, due to the use of false star anise from Japan, *Illicium religiosum*. The number of deaths is estimated at thirty. The product was introduced through the custom house and distributed extensively to all drug stores, which made it necessary for the national department of hygiene to confiscate all the anise of both the true and the mock varieties. The most common symptoms have been convulsions and rigidity of the limbs.

Laboratory of the National Department of Hygiene

After being at work for one year, the technical personnel of the Instituto Bacteriologico has been reappointed in a recent decree reorganizing the institution. The sections and the individuals in charge are: hygiene, Dr. Carbonell; plague, Dr. Uriarte; serotherapy, Dr. Sordelli; physics and chemistry, Dr. Wernicke; experimental physiology and pathology, Dr. Houssay; medical zoology, Dr. Bachmann, and parasitology, Dr. Wolffhugel. Dr. Bachmann has been engaged at a salary of $1,500 and an allowance of $100 a month, and has been designated for a mission abroad.

Disease of Horses

During the last few years, there had been observed on different occasions the appearance of epizootics among horses, sometimes localized and sometimes very extended. The last began about a year ago and went through different changes, although finally it extended to practically all the country, causing a large mortality. The technicians of the department of agriculture attributed the outbreak to a food intoxication, although without presenting any data in support of their views. The investigations of Dr. C. Flores (*Semana Méd.*, Feb. 27, 1918) revealed that a brain emulsion injected through the carotid reproduced the disease. Dr. Kraus has demonstrated that the brain of the horses affected, when inoculated into the brain of rabbits, produces a fatal disease, and that from the brain of the latter, there are obtained cultures of a diplococcus, which, when injected cerebrally into horses, produces the symptoms of the disease. The anatomicopathologic lesions correspond to those of Borna's disease.

CUBA LETTER

Havana, April 24, 1919.

Public Health Instruction

The Department of Sanitation is starting a new campaign of public health instruction among the poor classes of Cuba. A number of physicians and hygienists of that department will deliver addresses and give conferences in all the large factories and other places where large bodies of working people gather; the subjects will be hygienic living quarters, proper food and ventilation and prevention of diseases.

The Spanish Edition of the Journal

The physicians of Cuba have welcomed most enthusiastically the Spanish edition of The Journal of the American Medical Association. It will be of great aid to the non-English speaking physicians and will surely bring into closer contact the people of Latin America and North America. It is a queer fact that until 1900 the physicians of Cuba, as well as of the other Latin countries of this continent, turned their eyes to Europe and specially to Paris as the Mecca of medical education, and many French editors published Spanish editions of their journals. Today we know what we can get in the United States and are glad to have so near to us some of the most wonderful institutions in the world. In our judgment, the publication of the Spanish edition of The Journal is one of the greatest steps ever taken by the Americans in their campaign of scientific and commercial propaganda through the Central and South American countries. We congratulate the American Medical Association on their happy idea.

New Building for the Red Cross

The work on the new building of the Cuban Red Cross has already begun; it will be located in the central avenue of Havana, the old Prado or Paseo de Marti, and the total cost of the building is estimated at $1,000,000.

Epidemic Lethargic Encephalitis

No cases of this disease have been officially reported yet, although some have been given as suspicious. The board of health has sent a circular to all physicians urging them to report at once any case showing symptoms of paralysis and coma. The article on "Epidemic Encephalitis" by Peter Bassoe, M.D., which appeared in the last Spanish edition of The Journal, has had a wide circulation.

Personal

Dr. Max Einhorn of New York visited Havana last month, giving a lecture in the Academia de Ciencias Medicas on a new method of investigating the motility of the intestine.

Drs. A. Inclan and F. Leza have been appointed assistants in orthopedics and laboratory diagnosis, respectively.

Drs. J. Ramirez Olivella and E. de Aragon are the editors of the new *Revista de Obstetricia y Ginecologia.*

PARIS LETTER

Paris, April 3, 1919.

International Red Cross Conference

In order to determine on a definite line of action, the Comité des Sociétés de la Croix Rouge extended invitations to the most renowned specialists of the world to take part in this conference which convened at Cannes, April 1. Dr. Roux, director of the Pasteur Institute of Paris, was unanimously elected president. At the first session, Dr. Henry P. Davidson, president of the war committee of the American Red Cross, stated that the object of the conference was to organize a central committee for all the national Red Cross societies, this central board to sustain and direct the efforts of the various national societies so as to keep before the world the importance of hygiene, good health and measures for public safety. Each society is to maintain its independence, the central committee merely coordinating their efforts. At the second session, Colonel Strong of the American Army, and Dr. Biggs of New York, outlined the plans for the creation of the permanent international bureau. The work of this conference will be reported to a congress of all the Red Cross societies to be held in Geneva thirty days after the declaration of peace.

An American Hospital at Reims

The national American executive council for French wounded has decided to erect a hospital at Reims, for which purpose $100,000 have already been collected. The families of American soldiers who died in France will be asked to contribute to and take an interest in this hospital in memory of their sons who fought by the side of the French soldiers. This hospital will be turned over to the city of Reims on its completion.

Replacing the Physicians in the War Devastated Regions

The ministre des régions libérées has informed the physicians who formerly were resident in the war devastated zones that to enable them to return to their former place of residence as quickly as possible, they will be awarded a monthly indemnity of 500 francs for a period of two years, irrespective of any other allowance which they may receive for participating in the Services publics d'assistance et d'hygiène, especially in the Assistance médicale gratuite. Furthermore, these doctors will each receive a maximum advance of 10,000 francs, to be charged to their indemnity for damages sustained through the war, so that they can rehabilitate themselves and provide necessary equipment for professional work.

Franco-American Friendship

For the purpose of celebrating the second anniversary of the entrance of the United States into the war, the University of Lyons recently entertained, in the large amphitheater of the faculty of law and of arts, the 400 American students who are attending the various faculties of the city. All of the professors of the Lyons university assisted at this function.

Swiss Physician Decorated

Dr. Baup of Switzerland, medical director of Evian-les-Bains, has been made chevalier in the Legion of Honor for services rendered during the war to the repatriates.

Personal

At the meeting held April 1, the Académie de médecine elected M. Forneau, chef du service de chimie at the Institut Pasteur, a member of the section on pharmacy. At the meeting of April 8, Dr. Sergent, physician to Paris hospitals, was elected a member of the section of medical pathology. Dr. Yersin, director of the Pasteur Institute of Nha-Trang (Indochina), and Dr. Delagenière of Mans were elected national associates.

MADRID LETTER

Madrid, March 8, 1919.

The Social Movement Among Spanish Physicians

During the whole month of February and the few days that have elapsed of the present month, the medical event of the day has been the movement which has received its chief impulse from the assembly of the boards of directors of the *Colegios Médicos* (medical guilds) of Spain.

The *Colegios Médicas* are guilds which have had their ups and downs until recently when the government ordered the so-called *Colegiacion Obligatoria,* which means that it is obligatory for every physician in exercising his profession to belong to a *Colegio* (guild) which apportions the taxes among all its members, and must attend to all professional activities, as bill collecting, cases of illegal practice and quackery, interpretation and violation of sanitary laws, etc. The Boards of Directors of the *Colegios Médicos* (medical guilds) are elected by the physicians themselves, and are supposed to represent the social and professional aspirations of their profession. There is a *Colegio* in each of the forty-nine provinces of Spain.

In response to a call issued by the boards of directors of the *Colegio de Médicos* of Madrid, a meeting was held in the capital from the 27th to the 29th of January by the representatives of the boards of directors of thirty-three provinces and in addition ten others sent in their adhesion to the movement, thus forming a total of forty-three out of the forty-nine provinces in Spain.

In order to avoid all that might give any *Colegio* too much importance over the others, there was chosen for president of the assembly the president having the longest service among those present, Dr. Martín Istúriz of Palencia. The sessions were devoted almost entirely to comment on the motion presented by the accounting officer of the *Colegio de Médicos* of Madrid, Dr. Velasco Pajares. On the 29th the closing session was held, when the proceedings were approved, and there were adopted the following conclusions that summarize the so-called minimum program of the medical profession:

RESOLUTIONS OF THE ASSEMBLY OF MEDICAL GUILDS OF SPAIN

The Assembly of the *Colegios Médicos* of Spain has voted the following conclusions:

First: The medical profession considers as the *minimum program* of its aspiration for immediate realization:

1. Payment by the national government of the city and court physicians (coroners), and health officers.
2. That city physicians be made also health officers.
3. That the question of the pensions to widows and orphans of physicians who were victims of the influenza epidemic be decided immediately without red tape delays.
4. That the national government shall guarantee the salaries of physicians employed in medical relief by the provincial governments.

Second: In order to bring about ends which are considered a matter of mere justice, all necessary means will be employed; and for this purpose, there is appointed an executive committee with offices in Madrid, consisting of Drs. Almarza, Piga, Velasco Pajares, Coca, Albiñana, Criado y Carro to act in agreement with the chairmen of all the provincial *Colegios Médicos,* so that a common action will be exercised in so far as the authorities are concerned, in order to obtain the granting of the just claims of Spanish physicians.

The *Colegios Médicos,* which constitute the legitimate representation of the profession, wish to obtain wider powers which will primarily be of benefit to the public health of Spain. It will be of their incumbency to submit lists of eligibles to fill vacancies for city physicians and health officers, from which lists the city councils shall appoint their physicians. They will have charge of the administration of the funds for the asylum for physicians' orphans, and of filling vacancies in the institution; they will have free mailing privileges, which will facilitate the relations of the *Colegios* with official organizations and with their members; they will prepare lists of the physicians who have to form part of the draft boards and of all those forming part of official organizations who are now appointed on political grounds; and they will also have a direct representation in the organization of the sanitary services of their respective provinces to avoid the interference of politics in sanitary work.

The Assembly of the *Colegios Médicos* depends, for carrying out this minimum program, on the cooperation of all medical organizations which are ready to carry out the measures now in preparation by the executive committee, that will assume a radical form in case no assurances are received before March 15 that the government is in sympathy with the purposes of the medical profession of Spain.

THE EXECUTIVE CENTRAL COMMITTEE

The Executive Central Committee is composed of physicians belonging to the board of directors of the *Colegios Médicos* of Madrid and of editors of medical journals, the subscribers of which are chiefly rural physicians or city physicians in small communities. Thus we find the name of Dr. Albiñana, editor of the journal, *La Sanidad Civil*, who, a few days before, had organized a conference with 300 physicians present and more than 7,000 adherents, and that of Dr. Almarza, director of the *Boletin de la Asociacion de Médicos Titulares*, the meeting of which society followed immediately that of the boards of directors of the *Colegios*. At these two meetings, the same memorials and recommendations were approved. In order to secure joint action, editors of these two journals were incorporated in the central committee.

THE MEMORIAL TO THE KING

On the invitation of the president of the *Colegios de Médicos* of Madrid, Dr. Ortega Morejón, there was a meeting, February 30, of the representatives of the *Colegio Médicos* with the sole exception of those of the four provinces of Catalonia. At this meeting, those attending decided to insist on their program, exhausting every possible argument with the government before adopting a rebellious attitude, although if no attention is paid to their demands, they will, as a last resource, decide on a strike.

Those attending the three assemblies enumerated before, addressed a message to the king, in which special stress is laid on the fact that municipalities owe physicians at the present time more than twelve million pesetas (about $2,400,000), and that twelve city physicians, 1,500 health officers and 500 court physicians cannot get justice done to their claims. The memorial ended appealing to the king to intervene in the matter in accordance with the constitution.

THE MEDICAL STRIKE IN SPAIN

All Spanish physicians have received a circular accompanied by a pledge to be signed by them, and a copy of the instructions which should govern the conduct of every physician in the collective action contemplated. The instructions are tantamount to ordering a strike, prescribing what court physicians should do to avoid performing their duties, and even going if necessary, to the extreme of resigning their positions, and requiring others to render medical assistance to the poor, only of their own free will and not as official duty, and making the patients acquainted with this fact.

This propaganda has yielded the logical results, and the physicians of Cartagena and of Jerez de la Frontera, as a protest against the nonpayment of their salaries, have decided not to take part in the medical work connected with the draft in their respective localities.

LONDON LETTER

London, April 7, 1919.

Legislation to Forbid Vivisection of Dogs

A bill to prohibit any experiment of a nature to cause pain or disease to dogs, either with or without anesthetics, has been introduced into Parliament and is being considered by a standing committee. In opposing it, Sir Watson Cheyne asked the committee to realize the responsibility they were taking. He sympathized with the objects of the bill because he was a dog lover himself. Speaking as a surgeon who, for the last forty years, had almost every day had the life and health of patients in his hands, he said that he could not afford, with that responsibility constantly before him, to lose any possible source of information which might help him to carry out his work better. If the clause were passed, very great sources of information of the greatest value to the life and health of humanity would be denied to them. He could state definitely that every care was taken to see that no unnecessary suffering, and, indeed, he might say that no suffering, was caused to dogs by the experiments. Referring to the vivisection experiments conducted in connection with cancer investigation, he said: "If you pass this clause as it stands you may be the cause of the death of many people who would otherwise have lived. I implore you not to take that responsibility." Nevertheless the bill was passed through the committee stage by a majority of 17 to 13 votes.

In a letter to the *Times*, Sir Edward Schäfer describes the result as disastrous and as revealing an appalling depth of ignorance among our legislators. He points out that "the only sure basis of medicine is physiology, and physiology is absolutely dependent on the dog for knowledge which is to be directly applied to man. In this respect, no other animal can replace it; indeed, it is not too much to assert that almost all human physiology is based on information originally acquired from experiments on dogs. The immortal discovery of Harvey, from which physiology and with it medicine, as a science, date their real origin, was founded on experiments and observations on this animal. All modern knowledge of the action of the heart and circulation, of the functions of the brain and nervous system, of digestion, of external and internal secretions, of nutrition and metabolism, originated in and is based on experiments on dogs. The passage of such an act would completely arrest the progress of physiology in this country, which, since the time of Harvey, has always been in the forefront in regard to that science, more, perhaps, than any other. Dogs are already absolutely protected from suffering in any experiments which require to be made on them. No operation whatever can be performed on a dog without the express sanction of the home secretary; all operations must be conducted under complete anesthesia, and any dog suffering pain as the result of an operation must immediately be killed."

A State Medical Service: Sweeping Suggestions by the Labor Party

The Advisory Committee on Public Health, appointed by the labor party to consider the organization of preventive and curative medical services and hospitals and laboratory systems under a ministry of health, has reported in favor of the institution of a state medical service. The report stated that one of the most important duties to be undertaken by the ministry of health will be the reorganization of the whole mechanism of medical service, so that the greatest possible utilization is made of medical science, not merely for the treatment and prevention of disease, but for the inauguration of those systems of living, working, and enjoying leisure which experience and scientific research show to be capable of producing the greatest happiness for all. It is pointed out that while infant mortality has been greatly lowered by educational means in the last decade, nothing comparable has been done to extend the average expectation of life of adults.

The conditions of industrial life shorten life very markedly. The Registrar-General's decennial supplement shows that of those who survive over 15, the average period of life of purely industrial workers is 49.50 years; of purely agricultural workers, 67 years. The national service cards show that in certain occupations from 30 to 40 per cent. of the workers over 40 years of age are graded as unfit for military service. Insurance statistics show that in certain occupations from 30 to 40 per cent. may be unable to work for some period in each year owing to illness. The number of deaths from consumption is 700,000 a year, a destruction of life emulating that of the war. In large cities, such as Glasgow, 48 to 50 per cent. of the population live in one or two rooms tenements, and 50 per cent. of the children of the poor are found to be suffering from rickets. In Finsbury (a London district) the death rate per thousand of infants has been found to vary from forty-one in well-to-do parts to 375 in the slums. Venereal disease is widely prevalent, and fills hospitals and asylums with cases of disease which might be almost wholly prevented. The physician, having little opportunity to study or uphold the principles of preventive medicine, has failed to protest against industrial and housing conditions which have led to a most serious deterioration of national health and happiness.

So much of the physician's time is spent on the art of medicine, in visiting, humoring, and encouraging his patients, that too little remains for acquiring and practicing the science of medicine. Devoted attendance and kindly endeavor cannot make up for ignorance of the advancement of medical science, but they often cloak a failure to prevent illness and loss of working capacity, or to save life.

The report lays it down that a state service should be under democratic control, both at headquarters and at every local center. There must be nothing in the scheme to take away the choice of physician from the patient, but rather to widen and amplify the very restricted choice he now possesses. It must be the aim of the service to put every discovery of modern medical science, every class of specialist, every comfort of the best type of nursing home, sanatorium, and hospital within the reach of all, rich and poor. It must not prevent private practice, and no physician or patient must be forced to take any part or share in it against their desire. The present hospital and panel services must be radically reformed, and the coming service must not be bureaucratic, but one more resembling the chapters or lodge of a skilled craft. Each medical group, and not the single physician, would form the unit and would have the scientific laboratory for diagnosis and research, and the hospital and consultative center as its headquarters. Each unit would have control over its own local professional affairs, and be linked up to all other units. Along with the local lay health committee it would be responsible for the health of the area it served. It would try to ensure that supplies of food were wholesome and adequate, and that adulteration and sophistication were prevented, that weakly individuals were not overworked when ill or requiring relaxation, that infected individuals were not infecting others, and that infants and young children were being reared in a sensible way and on suitable food.

THE CLINICAL AND SCIENTIFIC MEETING OF THE BRITISH MEDICAL ASSOCIATION

Special Correspondence

The special clinical meeting of the British Medical Association, which replaced the usual annual meeting, differed considerably from that function. It might be described as a war meeting, for the subjects discussed were all connected with the war, and among both audiences and speakers khaki predominated over civilian dress. It was an excellent idea to hold the meeting early in the year so as to allow the large number of medical officers from the dominions and the United States now in Europe to attend. Many of them are here for the special graduate courses which have been organized for their benefit. At every meeting and casual gathering the uniforms of these officers were in evidence among those of the predominant British. Though no new discovery of any importance was announced, the meeting was a great success from every point of view. It was well attended, the discussions were animated, and the large number of speakers from the dominions and the United States who took part in the discussions rendered it more representative of the medical knowledge of the English-speaking world than usual. The American officers expressed great approbation of the arrangements, and indeed surprise that so soon after the war the proceedings ran so smoothly. They were loud in praise of the hospitality and help they everywhere received. The large lecture rooms of the Imperial College of Science were well suited for the discussions and demonstrations, but they were often overcrowded, many of the audience having to stand, and at one of the surgical meetings the room was packed, so that late comers could not even enter. This was no doubt largely due to the reduction of the number of sections to three, as stated previously (The Journal, March 22, p. 880). The main object was to garner and compare the experiences of the war, but as these had been published during that long struggle there was no opportunity for novelty. However, the discussions and demonstrations were most instructive.

The Presidential Address

Instead of being delivered as usual, the address of the president, Sir Clifford Allbutt, was printed and distributed to members. He took for his subject "The New Birth of Medicine," which he discussed in his well-known philosophic vein and elegant diction, which place him alone among contemporary English writers. Age has not impaired that subtle intellect. He claimed that we met at the greatest moment in the history of medicine; not merely because this was a gathering of the physicians of commonwealths, dominions, colonies, and friendly nations, to consider the lessons of a great war; not only because the medicine of modern peoples and empires had vindicated its ascendancy in the greatest war of all time, but chiefly because at this moment it was revealed to us that medicine had come to a new birth, and in this regeneration had fought on no unequal terms with other arms in a glorious campaign. This new birth was nothing less than the enlargement of medicine from an art of observation and empiricism to an applied science founded on research; from a craft of tradition and sagacity to an applied science of analysis and law; from a descriptive code of surface phenomena to the discovery of deeper affinities; from a set of rules and axioms of quality to measurements of quantity.

War Neuroses

The discussion on this subject was introduced by Lieutenant-Colonel Mott. He said that in no previous war had such a vast number of men been disabled by functional nervous disease; but in no previous war had such conditions existed. They were the unprecedented exposure to the continuous physical effects of high explosives and poison gas and to all the developments of scientific barbarism. Moreover, the periods in which men had been exposed to the terrifying effects of modern trench warfare had exceeded all previous records. The conscripted army had included all sorts and conditions of men, and we had now found out what a large proportion of the male population of a highly civilized country possesses a neurotic or neuropathic predisposition. In 1917 it was calculated that one third of the unwounded and one seventh of the total discharges, including the wounded, were permanently unfit on account of functional nervous or mental diseases.

The war office authorities recognized three forms of war psychoneurosis—shell shock, hysteria and neurasthenia. The term shell shock led to much misconception. It was a natural conclusion, at first, that men who had been exposed to the unprecedented stress of bombardment should suffer from commotio cerebri. But a great many returned as suffering from shell shock would have been more appropriately designated "shell shy." It was extremely difficult to differentiate commotional shock from emotional shock, for both may be attended by unconsciousness and followed by hysterical or neurasthenic symptoms. Still there was no doubt that men suffered from commotional disturbance of the brain without any signs of injury on the body and were the subjects of organic changes, due to the forces generated by the detonation of high explosives. This was proved by the fact that the cerebrospinal fluid, withdrawn by lumbar puncture, contained blood and came out under pressure. Moreover, the frequency with which rupture of the drum of the ear, deafness, labyrinthine changes, and voltaic vertigo occurred showed that the explosion was sufficient to cause a commotion of the brain as severe as might be caused by a blow on the head. Further proof was the fact that microscopic hemorrhages had been found throughout the brain in cases with no visible sign of injury on the body. These cases were commotional shock, as against emotional shock. On the other hand, a soldier born with or having acquired emotivity tended sooner or later to develop one or other form of nervous complaint. A shell burst near him and he saw the flash and was blinded by it, and remained functionally blind; he heard an explosion and was temporarily deafened by it and remained deaf, this being in a sense a method of defending himself against unbearable sights and sounds. These and other conditions of the same sort were curable by suggestion given in opposition to the emotional trend producing the phenomena.

Cases might, of course, occur in which both commotional and emotional shock were present. Though a neuropathic tendency greatly assisted the onset of shock, this might occur in sound individuals. The instincts connected with the emotions of fear and anger were all-important, but equally so was the herd instinct, and morale, good or bad, in a regiment was largely dependent on the instinctive suggestibility of man. A British general was reported to have said: "Ten per cent. of a regiment will follow you to the gates of hell; 10 per cent. will fall down or run away; and the remaining 80 per cent. will follow either." It might therefore be supposed that in the 10 per cent. who followed anywhere the primitive emotion of anger, with its instinctive reactions, was inborn and dominant in the personality, and that to fight was the instinctive reaction of self-preservation in these men. But, in modern trench warfare anger was impotent. The soldier could neither fight nor run away. He could only crouch and hide himself, the instinctive attitude of the timid animal when threatened with danger. In treating the functional neuroses, Dr. Mott did not regard psychotherapy as important, but it was valuable in hysteria.

Prognosis with Special Reference to the Assessment for Pension Purposes and to the Capacity of the Worker

Dr. Thomas Lewis read a paper on this subject. He said that the great defect in the system of examining recruits had been reliance on methods suitable enough in forming or completing the diagnosis of grave cardiac disease, but unsuited in detecting the earliest manifestations of ill health. In sorting men who are the subjects of serious cardiac affections, a small number are at once and easily placed in a group as totally unfit for service. They showed manifest and obvious signs of disease. The chief work came in assessing fitness or unfitness in the far larger group of those who bordered on disease. In these, the great majority, the physical examination, the special examination by means of mechanical or electrical instruments failed to achieve our purpose. The secret of successful prognosis lay in actual tests of efficiency. In the great majority of recruits, whether suspects of cardiovascular defects or not, actual tests of endurance are the only tests on which reliance can be placed.

These tests are equally applicable in sorting convalescent soldiers and in assessing pensions. Because they were not used, a large proportion of present assessments were grossly at fault.

Whenever a soldier failed to show such unmistakable signs of ill health as to leave no doubt as to his condition, his reaction to work must be observed in assessing his disability. In many cases the act of undressing might be a sufficient test to elicit breathlessness. In some a short hopping test sufficed; in others more strenuous and prolonged effort was required to produce signs of breathlessness and fatigue. The measure of efficiency was the amount of work undertaken to provoke objective symptoms. But such tests should not replace the physical examination; they should supplement, or be supplemented by, the latter. Many men performed long and strenuous work in the front line and on the forced march, yet were the subjects of serious structural heart disease. Many men presenting clear signs of developed mitral stenosis or aortic disease showed, when deliberately tested, an almost or quite perfect tolerance of hard physical work. Exercise tests would not eliminate such recruits, neither would they form a sufficient basis of prognosis in men returned to civil work. Nevertheless, in structural disease of the heart exercise tests were of considerable consequence. Up to the end of January, 1919, over 50,000 men had been discharged from the army and navy for affections attributable to the heart. Many more remained in the army. He calculated that of the number one third to one half were suffering before they joined the service. Of the 50,000 cases of so-called heart disease, only 5,000 were suffering from heart disease in the structural sense.

Sir James Mackenzie (who presided) said that the patient wanted to know what bearing his symptoms had on his future and the physician must be prepared to answer him. This meant not only a wide knowledge but a discriminating judgment. It meant a clear idea of the value of symptoms, their meaning and their bearing on the evolution of disease. Let no man think that this could be achieved by the aid of elaborate instruments, by modern magic, so to speak. It could only be achieved by close and careful observation of many patients over a long period of time and by diligent thought. But the progress of medicine depended on this observation and this thought, for after all the only indication that a man was unwell was his symptoms. The field of medicine had been long too much neglected in favor of so-called new methods, which at best were but a means to an end.

Gunshot Wounds of the Chest

Col. T. R. Elliott, F.R.S., opened the discussion. He said that after a wound of the chest the respiration was shallow and quickened. On the injured side the intercostal muscles were said to show an increased tone, "guarding the wound within," and the diaphragm was relaxed in the complete expiratory phase. There was reason to suppose that also the bronchiolar musculature was reflexly contracted, which damped down the current of air. The lung tended to be small on the wounded side and to collapse everywhere. In cases of hemothorax the coagulation was interfered with by the respiratory movements, so that fibrin was to a certain extent whipped out of the blood. The pleura reacted by a mild inflammation (effusion) to some constituent of the hemothorax, even when sterile. The fluid mixture of whipped blood and pleural effusion could be withdrawn by aspiration; the clot could not. The clot developed in time into a tough jacket, which restricted the lung to the size it was at the moment confined and hindered subsequent expansion when the fluid was removed. Therefore, a large hemothorax should be removed as completely as possible at the earliest date. If the hemothorax was chiefly fluid, early aspiration would suffice. Even on the second or third day *this might be done.* With a large hemothorax it was difficult to be certain that clot was present. More than one failure in attempted aspiration was necessary before it could be concluded that the failure was due to excess of clot. When this was proved, thoracotomy, evacuation, and closing completely without attempting drainage was the treatment. But if delayed so long that the clot had time to organize this was unsatisfactory. The urgent problem of chest wounds in this war, however, was checking the spread of infection. Half of the deaths from chest wounds at clearing stations and all the deaths on the lines of communication were due to sepsis. Of septic hemothorax cases, 50 per cent. were fatal under the average skill available in hospitals. Those who survived, thanks to early detection and adequate drainage, were in hospital twice as long as sterile hemothorax cases. One third of them were invalided out of the service, whereas practically every case of sterile hemothorax got back to duty.

Malaria

Lieut.-Col. S. P. James discussed the risk of the spread of malaria in England, which was free from indigenous disease until August, 1917, when cases were discovered among soldiers and civilians who had never been out of the country. The total number of such cases was now 326. Demobilization would result in malaria carriers being scattered all over the country. In a town in which indigenous malaria occurred it was not scattered at random but occurred in particular houses where there was a carrier and did not spread to neighboring houses. Hence such houses were called "malarious houses." This could be explained only on the hypothesis that the particular mosquito which bit the carrier remained in that house or if it fled outside returned to it. These houses were very favorable for mosquitoes. They were old fashioned, containing many dark corners where the mosquitoes settled. Such dangerous dwellings could be detected by ascertaining whether mosquitoes could be caught in them day after day for a week or more during summer. The factor which determined the occurrence of indigenous cases of malaria was not the abundance of carriers or of anophelines but the degree in which there was close and continuous association between the malaria carrier, the anopheline and the susceptible person. This was likely to occur only in the particular type of dwelling which the anopheline selected as its resting and feeding place. It would be difficult if not impossible to find a locality in England in which antilarval measures would be "worth the candle," but anophelines could be kept out of houses by whitewashing and other cleaning up.

Sir Ronald Ross (who presided) said that he was not entirely sure that quinin acted as a direct poison to the malarial parasites. He suggested that it stimulated the production of some antibody which destroyed them.

The Projected Antivivisection Legislation

In connection with this matter (mentioned in the last letter to The Journal) Sir William Osler moved the following resolution: "This meeting of the combined sections of pathology and preventive medicine of the British Medical Association learns with dismay of the possibility of the passage through the House of Commons of a bill to prohibit experiments on dogs. The anatomic and omnivorous habit of the dog, together with the fact that it can be kept in health and comfort under the conditions imposed by laboratory work, render the larger sort the only available subject for experiment in important fields of physiologic and pathologic investigation. The prohibition would have the deplorable effect of hampering the progress of medicine and of rendering Britain alone among the civilized nations unable to contribute to progress in a department of research in which it has played a distinguished part." Sir William Osler said that from Galen to Victor Horsley progress was based on experiment.

Col. Haven Emerson, U. S. Army (who presided), said that it was impossible for physiologists and laboratory workers to bear the entire burden of conducting the conflict against the legislative attacks on the freedom of science. The resolution was not enough; it must be followed up, and the lives of parliamentary representatives made miserable until they adopted the proper point of view.

Venereal Diseases

Sir William Osler presided over the discussion on venereal diseases. He said that the four pressing questions were notification, prevalence, prevention and treatment. We could never go far with prevention and cure until the cases were *notified and under full control.* Laws enforcing this were now effective in parts of Australia and of the United States. Naturally there were objections just as there were to the notification of tuberculosis, but notification could be carried out with secrecy, and it was the only measure which would enable the profession to keep control of the cases. Syphilis was as prevalent as ever, though possibly less virulent. Previous measures had failed. The educational and moral campaigns had helped but had not succeeded. To put venereal diseases in line with other acute infections would be to ensure thorough treatment of each case, the control of harlotage and of infected harlots, the prevention of marriage of infected persons, and the provision of methods and measures of disinfection for persons who had been exposed, especially arrangements for early disinfection at the venereal centers.

Col. L. W. Harrison, who is in charge of the well-known military hospital for venereal disease at Rochester Row, London, opened the discussion. He said that in 1916 ablution chambers were set up in barracks, where men could disinfect by irrigating with potassium permanganate and inunction with calomel ointment. Generally they were not a success because medical officers did not take a great interest in them. In 1918 a new system was adopted. A man could have on application a small bottle of potassium permanganate solution with which to swab the parts and a tube of 30 per cent. calomel ointment, some to be squeezed into the urethra and some to anoint the parts after exposure. The results so far had not been particularly striking for the whole country, though there was no doubt as to the efficacy of these methods when properly applied. In the London district the admission rate per thousand troops per annum had been reduced by these measures from 95.6 to 32. Coming to the second line of defense, most of the abortive methods of treating gonorrhea had been tried in the British army, but only on a small scale, as the men reported too late. The results confirmed those obtained on a much larger scale in the Australian army. Success depended on the man's reporting within twenty-four hours of the onset. The best results were obtained by the following method: 1. After urinating disinfect the glans and meatus with 1:2,000 mercuric chlorid or with spirit. 2. Irrigate the whole urethra with 1:4,000 potassium permanganate. 3. Inject 10 per cent. argyrol or similar silver salt and make the patient retain it for twenty minutes. Repeat this twice daily for three or four days. 4. Irrigate once daily with potassium permanganate for from four to six more days. In the later stages intermuscular injections of succinimid and other compounds of mercury were tried. They frequently brought about a rapid diminution or disappearance of discharge, but in the long run they failed to curtail the disease. Vaccines had been tried, but the only one which seemed to hold out hopes of success was that prepared by Capt. D. Thomson in the Rochester Row Laboratory. In gonorrheal arthritis excellent results had been attained from the intravenous injection of antityphoid vaccine, suggested on the principle of "pyrogenic" therapy.

In the treatment of syphilis eight injections of 0.3 gm. of arsphenamin and six of 0.75 grain of calomel were given in twenty-eight days. Up to November, 1915, there was no trouble of any moment, but then a series of severe cases of dermatitis began and seven proved fatal, chiefly from pneumonia or toxemia complicating the dermatitis. In March, 1916, an interval was introduced into the course so that those susceptible to arsphenamin could display the effects and a careful watch was kept for the first sign of erythema. Later a second interval was introduced. These precautions bore fruit, for among 16,000 patients subsequently treated only five deaths were traced, some of which appeared to be due to other causes. The number of clinical relapses amounted to 1.1 per cent. for those patients who had taken 2.4 gm. of arsphenamin.

Colonel Ashbourne, U. S. Army, stated that in the American Army the venereal rate in France was below half of the best rate they had ever obtained before this war. The campaign against venereal disease had been very successful. In the American Expeditionary Forces moral, mental, educational, recreative and religious influence had borne good results, as well as threats of punishment, especially the threat of retention in France, which had been very effective.

Marriages

Stanton Harold Barrett, Lieut., M. C., U. S. Army, Chattanooga, Tenn., formerly on duty with Base Hospital No. 80, American E. F., now instructor in bacteriology American E. F. University, Beaune, France, to Miss Catherine Clarke of Owensboro, Ky., Aug. 24, 1918.

Johannes Benedict David de Beer to Miss Mabel Adelia Jarvis, both of Brooklyn, April 12.

Charles William Larrabee to Miss Dovie Mae Collins, both of Gainesville, Ga., April 14.

Lyle Millan Mason to Evlyne Wailes Brewer, both of Washington, D. C., March 19.

Abraham Lear Morris to Miss Fanny Reeves Ellison, both of Chicago, April 9.

Herbert A. Adler to Miss Emily Frisch, both of Brooklyn, April 7.

Deaths

Lewis Theophilus Griffith ⊕ **Lieut.-Col., M. C., U. S. Army,** New York City; Albany N. Y., Medical College, 1897; aged 45; a member of the Association of Military Surgeons of the United States; who entered the military service as lieutenant and assistant surgeon, First New York Volunteer Infantry, in 1898, serving through the war with Spain, then was made acting assistant surgeon, U. S. Army, until March, 1901, when he was promoted to captain and assistant surgeon, U. S. Volunteers, and ten months later to major and surgeon, U. S. Volunteers; who served as assistant in the military hospital at Honolulu, from August, 1898, to December of the same year; and in September, 1900, was sent to the Philippine Islands, and at the outbreak of the World War reentered the service as major, M. C., and was sent to France in September, 1918, in command of Base Hospital No. 76, Vichy; died from disease, at Vichy, April 8.

H. Augustus Wilson ⊕ Philadelphia; Jefferson Medical College, 1879; aged 65; one of the most eminent orthopedic surgeons of the United States; for thirty-nine years a member of the faculty of his alma mater as clinical lecturer, clinical professor and professor of orthopedic surgery; from 1879 to 1892 a lecturer in the Philadelphia School of Anatomy; professor of mechanical surgery in the Philadelphia Polyclinic from 1885 to 1897 and thereafter emeritus professor; clinical professor of orthopedic surgery in the Women's Medical College of Pennsylvania, Philadelphia, in 1889; orthopedic surgeon to the Jefferson Medical College, St. Agnes' and Philadelphia General hospitals; died at his home, April 16, from uremia.

George W. Wagoner ⊕ Johnstown, Pa.; Western Reserve University, Cleveland, 1878; aged 63; treasurer of the Medical Society of the State of Pennsylvania, and president in 1909; secretary, member of the board of managers and of the surgical staff of the Conemaugh Valley Memorial Hospital; mayor of Johnstown from 1896 to 1899, and president of the board of fire commissioners in 1906; one of the sufferers in the Johnstown flood, but who nevertheless worked heroically throughout that period; died at his home, April 26, from pulmonary embolism.

Robert Henry Gilliford ⊕ Pittsburgh; Medical College of the State of South Carolina, Charleston, 1874; aged 69; president of the Bank of Secured Savings, Safety Real Estate Company, and Security Improvement Company, Pittsburgh; for many years a member of the staff of the Allegheny General Hospital, and poor physician of Allegheny City; for two years a member of the common council and for nine years a member of the select council; president of the Allegheny Fire Insurance Company, died at his home, March 28.

Nomus Paige, Taunton, Mass.; Dartmouth Medical School, Hanover, N. H., 1861; aged 79; a member of the Massachusetts Medical Society for fifty-five years; a member of the staff of the Morton Hospital, Taunton; physician to the Taunton jail for twenty-five years; a trustee of the Taunton Savings Bank; one of the founders and directors of the Taunton River Mills; organizer of the Taunton Electric Light Company, and manager from 1882 to 1901; died at his home, April 16.

Reuel Baker Kimball, New York City, and Sea Bright, N. J.; College of Physicians and Surgeons in the City of New York, 1880; aged 64; a fellow of the New York Academy of Medicine; attending physician to the Babies' Hospital, and consultant to the Monmouth Memorial Hospital, Long Branch, N. J.; died in the Stern Hospital, New York City, April 18, from bronchial pneumonia.

Jefferson Scales, New Brighton, Staten Island, N. Y.; Jefferson Medical College, 1867; aged 73; a member of the Medical Society of the State of New York; and once president of the Richmond County Medical Society; a Confederate veteran; consulting physician to the S. R. Smith Infirmary, and St. Vincent's and Sea View hospitals; died at his home, April 14.

Henry A. Page, Newport News, Va.; Yale University, New Haven, Conn., 1865; aged 79; surgeon of Massachusetts Volunteers during the Civil War, and a practitioner of Boston; an inmate for many years of the National Soldiers Home, Newport News, Va.; died in the veteran's ward of that institution, March 20.

⊕ Indicates "Fellow" of the American Medical Association.

Amanda Lockman Shelton, Bloomfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1892; aged 68; for many years a member of the staff of the Bloomfield Hospital; while suffering from despondency and mental derangement, hung herself in the Bloomfield Hospital; April 9.

Robert Campbell MacGregor, Duncan's Station, B. C.; Manitoba Medical College, Winnipeg, 1896; aged 50; formerly of Saginaw, Mich., and professor of physiology in the Saginaw Valley Medical College; died at his home, April 2, from cerebral hemorrhage.

George Rice Adkin, Grand Rapids, Mich.; Grand Rapids, Mich., Medical College, 1899; aged 42; formerly lieutenant, M. R. C., U. S. Army, was found dead in his room, in Detroit, April 14, from the effects of an overdose of chloroform.

John Devoe Martinez Cardeza, Brooklyn, N. Y.; University of Pennsylvania, Philadelphia, 1877; aged 78; for many years a practitioner of Philadelphia; died at the home of his son in Brooklyn, April 15, from pneumonia following influenza.

Frank Howard Ransom, Buffalo, N. Y.; University of Buffalo, N. Y., 1900; aged 47; a member of the Buffalo Academy of Medicine, and consulting obstetrician to the Buffalo General Hospital; died at his home, April 2.

Bryan O'Brien, Philadelphia; University of Pennsylvania, Philadelphia, 1881; aged 78; also a pharmacist; a petty officer in the Navy during the Civil War; died at the home of his daughter in Philadelphia, April 11.

Carl W. Lindner, Martin, Fla.; Miami Medical College, Cincinnati, 1875; aged 74; for many years a practitioner of Anthony, Kan.; died in the Marion County Hospital, Ocala, Fla., April 5, from cerebral hemorrhage.

George S. Rainey ⊕ Salem, Ill.; Louisville, Ky., Medical College, 1875; aged 69; a veteran of the Civil War; major and surgeon of U. S. Volunteers, during the war with Spain; died at his home, April 8.

Abram Eldridge Carpenter ⊕ Boonton, N. J.; University of Pennsylvania, Philadelphia, 1874; aged 66; a specialist in tuberculosis; mayor of Boonton in 1891; died at his home, April 8, from nephritis.

William Harris Pope, Jr., Beaumont, Texas; Tulane University, New Orleans, 1910; aged 33; a member of the State Medical Association of Texas; died at his home, April 12, from pneumonia.

John Wilson Burns, Watervliet, N. Y.; Albany (N. Y.) Medical College, 1901; aged 40; physician to the local tuberculosis dispensary; died at his home, March 29, from pneumonia.

James H. Holstein, New Orleans; Tulane University, New Orleans, 1899; aged 50; died at Touro Infirmary, New Orleans, April 9, a few hours after an operation for goiter.

Elmer Bert DeGraff, Alexandria, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 55; died at his home, April 1, from pneumonia following influenza.

Abraham Branaman, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1899; aged 65; died in the Kansas City General Hospital, April 1, from cerebral hemorrhage.

Alphonse A. Clafflin, St. Albans, Vt.; University of Vermont, Burlington, 1890; aged 61; died at his home, January 16, from bronchopneumonia following influenza.

Yost S. Trayer, Denison, Texas; American Medical College, St. Louis, 1876; aged 69; died in a hospital in Sherman, Texas, April 4, from cerebral hemorrhage.

Patrick Francis Boyle ⊕ South Bethlehem, Pa.; Jefferson Medical College, 1902; aged 56; died in a church in South Bethlehem, March 30, from endocarditis.

Harry Mayfield, Ogden, Utah; McGill University, Montreal; aged 38; died in Salt Lake City, March 20, from an overdose of a narcotic poison.

Martha May Howells, Detroit; New York Medical College and Hospital for Women, New York City, 1878; aged 70; died at her home, April 2.

Samuel H. Green, Atlanta, Ga.; Atlanta (Ga.) Medical College, 1882; aged 53; died in a sanitarium in Atlanta, April 3, from heart disease.

Duane B. Miles, Cleveland (license, Ohio, 1896); aged 68; a practitioner for about forty years; died at his home, April 7.

William Gibson, Defiance, Ohio (license, Ohio, 1896); aged 78: died at his home, April 3.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

IODEX

At fairly frequent intervals physicians receive through the mail free samples of "Iodex," a black ointment sent out in small, circular aluminum boxes. Iodex is sold by Menley and James, Ltd., New York City, under the claim that it is a preparation of free iodin,[1] minus the objectionable features that go with free iodin. The preparation was examined in the A. M. A. Chemical Laboratory in 1915, and found practically devoid of free iodin. The laboratory also reported that when one or two grams of Iodex was rubbed on the skin of the forearm on several subjects and the urine collected and tested for iodin, the results were negative. This disproved the claim that "thirty minutes after inunction [with Iodex] iodin can be found in the urine."

The findings of the laboratory, which were summed up in a report (The Journal, June 19, 1915) of the Council on Pharmacy and Chemistry on Iodex, was essentially as follows:

> 1. The composition is incorrectly stated; the actual iodin content is only about half of that claimed.
> 2. The action of Iodex is *not* essentially that of free iodin, although that is the impression conveyed by the advertising.
> 3. The assertion that iodin may be found in the urine shortly after Iodex has been rubbed on the skin, has been experimentally disproved.

At the time the laboratory reported its findings, it pointed out the obvious contradiction in the claim that Iodex is not only an "effective free iodin application without drawbacks" but also a means of "really efficient external iodine therapy without stain or irritation." It is impossible to have free iodin present in sufficient quantities to be therapeutically efficient and not get skin-stains and irritation.

In a recent issue of the house organ, *Pharmacal Advance,* there was a large display advertisement of Iodex under the heading: "For Prophylaxis and to 'Double Cross' Disease," with the claims:

> "Free Iodine"
> "Rub Through Skin"
> "Does Not Irritate nor Stain"

On other pages of the same issue these claims appeared:

> "There is no therapeutic virtue in Iodex which is not inherent—though often latent—in Free Iodine; and there is no virtue in Free Iodine which is not available in Iodex."
>
> "In Iodex all the beneficent properties of Iodin are emphasized and all its disadvantages are eliminated—in a word, Iodex is Pure Free Iodin presented therapeutically active and efficient, ready for use in all conditions, with all the well-known powers of Free Iodin, but without the sequelæ of unpleasant effects, as irritation, corrosion, desquamation, staining, etc., which defeat the ends of treatment when ordinary preparations of Iodin are used. The fact that Free Iodin in the form of Iodex can now be used in rectal and vaginal treatment, without irritation, speaks volumes for its penetrability and bland action."

These quotations are sufficient to show that the manufacturers of Iodex still persist in their claim that the product contains free iodin. In view of this the A. M. A. Chemical Laboratory has again examined Iodex, having recently purchased specimens on the open market. It reports that Iodex gives no test for free iodin, or at most, but minute traces.

An interesting side-light on the methods of Menley and James is also brought out in the issue of *Pharmacal Advance* just quoted. Under a "department" misnamed "Book Reviews" the following appears:

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[1] "Free" or elementary iodin (such as the tincture of iodin) is used externally for its local irritant and antiseptic effects. "Combined iodin," (*e. g.,* iodid of potassium) does not produce these effects and when preparations containing iodin in combined form are used, it is with the expectation of obtaining the systemic ("alterative") effects such as are produced by iodids.

> "The Actions of Drugs.—Torald Sollmann, M.D. Published by W. B. Saunders Co., Philadelphia. This is a book of lectures designed for students in pharmacy and deals with the subject in plain and simple language. The author in his introduction has brought out the fact that over-counter prescribing is baneful both to the public and to the pharmacist himself. Among some of the interesting points brought out that *Pharmacal Advance* has always maintained, namely, that 'Potassium iodid is not absorbed efficiently by the skin; hence the ointment of potassium iodid is unscientific.'
>
> "We would especially call attention to Ungt. Iodi U. S. P., containing Potassium Iodid, used as a solvent for its iodin content. Accepting Sollmann's statement, it is to be assumed that Ungt. Iodi U. S. P. has not 100 per cent. efficiency."

Garbling statements from scientific works for the purpose of puffing proprietaries is not unusual in nostrum exploitation. The facts are that the statement in Sollmann's book, introduced in the Menley and James house organ under the guise of a book review, appeared in a discussion of iodin compounds. In this the author points out that to obtain systemic iodid effects, it is irrational to apply iodin preparations externally. So far as the free-iodin content of the official ointment of iodin is concerned, L. E. Warren (Reports of the A. M. A. Chemical Laboratory, 1917) has shown that even after more than six months this ointment still contains about 75 per cent. of the free-iodin originally added. The official ointment (*Unguentum Iodi*, U. S. P.), therefore, so far as its free-iodin content is concerned, is far superior to Iodex, which contains no iodin in its free state.

TWO MISBRANDED NOSTRUMS

Bull's Herbs and Iron Compound.—Shipped in March, 1917, by the W. H. Bull Medicine Co., St. Louis. Analysis showed the preparation to be a weak alcoholic solution containing iron, phosphates, sugar and vegetable derivatives, among which were quinin, red pepper, gentian and podophyllum. Falsely and fraudulently represented as a remedy for weak nerves, ailments peculiar to women, scrofula, rickets, liver, kidney and bladder diseases, etc. Fine, $25 and costs.—[*Notice of Judgment No. 6215; issued April, 1919.*]

Effervescente Granulare.—Shipped in June, 1917, by the Milano Pharmacal Co., Inc., New York City. Analysis showed the preparation to consist of over 13 per cent. of baking soda, 61 per cent. of sugar, 3 per cent. of borax, and 17 per cent. of cream of tartar. The product was invoiced as "Eff. Magnesia," but the analysis showed there was no magnesia present. It was declared adulterated because of presence of borax, and misbranded because, while sold as Effervescent Magnesia, it contained no magnesia. Fine, $15.—[*Notice of Judgment No. 6221; issued April, 1919.*]

Correspondence

"THE SUPPLY OF PRACTICAL NURSES"

To the Editor:—I pointed out, in The Journal last year, the need of more nurses, of a class of women in that profession too little represented now, and of a shorter and better balanced training course. Since then, renewed criticisms of the old régime have appeared, culminating in your trenchant editorial of January 25 on "The Supply of Practical Nurses." And in recognition of these needs, the nursing situation is undergoing an evolution. Stanford University offers its college degree and nurse's diploma after three years in the university and two more in the hospital, and is also giving a preliminary course of intensive training for three months of an eight-hour day, at a fee of $90, to qualified young women, who must live at home. This aims to do three things: (1) Give training in sciences in a properly equipped school, thus enabling smaller schools to demand this prerequisite and devote themselves solely to the practical part of nurses' training; (2) establish the precedent of student-nurses living at home or in homes of their own choosing; (3) afford them an insight into the educative side of the work without the monotony and drudgery and endless repetition of menial tasks. Once show the highest type of women that the nurse's training may be an education and not a mindless, long-drawn-out vocational training, made bearable only by its emotional appeal, and we shall render as great a public service as was rendered when training schools were first established.

The Vassar Plattsburg for nurses was a frank attempt to attract educated women into the nursing profession. Findings in the occupational history of college women, published in the May, 1918, number of the *Collegiate Alumnae Journal*, are significant. Of 16,000 graduates of ten years' standing, 7,819 entered the profession of teaching; 471, the profession of social service; eighty-four, the profession of medicine, and thirty, the profession of nursing. Contrast this pitiful showing of college women in nursing with their response to the wartime appeal for nurses, which offered a distinctly educational program to begin with. The training camp for nurses at Vassar College cut down by nine months the three year course for all women of not over ten years' graduation time from recognized colleges. Over 1,000 applications were received; 435 applicants were carefully chosen, and given twelve weeks' intensive training under hospital régime and the same discipline off duty as prevails on any campus. Charges for the service were $95. Each of the 435 was placed under moral obligation to complete the training. No pledge was exacted to engage in nursing on graduation. Of the 435 entrants, 418 were graduated and 412 assigned to hospitals, 399 entering hospitals within a few months. The armistice naturally withdrew the big influence which led women into service, and yet the fact that up to Jan. 1, 1919, 104, or 25 per cent., had already withdrawn needs investigation. Inquiry reveals that 25 per cent. of these 104 resignations were due to the armistice; 15 per cent. more resigned to marry, and 4 per cent. to study medicine. Five died; three were rejected by the schools they entered; 289 still remain in hospitals. Twenty-one entered one of the best New York schools. Five dropped out before January 1, one to study medicine, one because of distaste for the work, and three because of illness. Sixteen are still in training, reported interested and satisfactory, though there is a general criticism of the monotony of work.

Plainly it was the desire for war service that brought college women into the nursing field. Without the urge and glamor of war, it offers, as at present taught, a too large proportion of mechanical tasks, destroying initiative and giving no scope for their trained resources commensurate with that in other professions.

The following data on nurses' training for war work was collected by the writer in France, and summarizes the opinions of hundreds of army physicians:

1. Wartime nursing was a new field, and nurses had much to learn.
2. Previous training and preconceived ideas were often a menace, instead of a help.
3. During drives, intelligence, willingness and strength determined usefulness, and no nursing training beyond ordinary ward experience was essential.
4. Shortage of nurses made refinement of nursing impossible. It was a new game under abnormal conditions which gave the fine type of nurses' aids a relatively greater advantage than they might have had under normal conditions.

The comparison at home presents a sad picture. The Journal editorial of January 25 accuses the trained nurse of bringing discredit on her profession which only the brilliant record of the service and sacrifice of her sister abroad can blot out. The charges of autocratic conduct, of unwillingness to meet home emergencies in the crises of illness, and of unwarranted demands for higher pay, should, as you point out, be limited to a small percentage of those who did not go overseas; but in this small percentage, the abuses of opportunity were so much worse than suggested by these criticisms that it must remain a reflection on all nurses if they do not themselves investigate and punish the flagrant defamers of their profession. The deduction is made that women of the right personality and native intelligence, preferably high school or college graduates, will after a year's training be fully as competent, in 90 per cent. of illnesses, as the three-year trained nurse, and fit into the average household better. The high-salary demand is the natural outcome of the absurdly long training period as compared with the short service later. Possibly the selfishness is a fatigue reaction to be overcome by an eight-hour day. Finally, personality and conduct are the resultant of heredity and the training begun a decade before the training school gets her. The corrective of bad breeding, lack of adaptability, and unwillingness to serve in emergencies, lies in a broader education, with less routine menial work, better home environment, and more inspiring and stimulating contacts.

Philip King Brown, M.D., San Francisco.

SUCCESSFUL HUMAN INOCULATION WITH PURE CULTURES OF PFEIFFER'S BACILLUS (B. INFLUENZAE)

To the Editor:—Some years ago when working with hemophilic bacilli from various respiratory infections, especially pertussis, I had occasion to test the pathogenicity of these organisms in the human throat. The result of this experiment was briefly recorded at the time in an article published under a general title (The Bacteriology of Whooping Cough, *J. Infect. Dis.* **3**:1, 1906), and for this reason might now be overlooked. Since the results were so striking, and in view of the importance of these bacilli in relation to the recent pandemic of influenza, I have been led, at the suggestion of several workers in this field, to record again the experiment under a more definite and pointed title.

The essential facts are these: Hemophilic bacilli were being found by me commonly in the throats and sputums of a number of infectious diseases, including pertussis, measles, varicella, bronchitis and many others, during interepidemic periods of influenza. They appeared all alike and had not at that time nor have they since been differentiated from the bacillus described by Pfeiffer (*B. influenzae*) as the cause of the influenza pandemic of 1889-1890.

Since these organisms revealed only slight pathogenic powers for animals and did not produce characteristic lesions in them, it was decided to test the effect of the bacilli on the human being. A young man, healthy in every way, volunteered and agreed to submit to the inoculation of his throat with pure cultures of the bacilli. Careful preliminary cultural examination of his throat revealed no bacilli of this character. He had not had pertussis, and according to his own statement and that of his relatives, had not had any serious illness. It is probable that he had never had true influenza, but this could *not be certainly determined.*

Typical blood agar pure cultures, twenty-four hours old, recently isolated from an uncomplicated case of pertussis were selected for the inoculation. They were washed off and suspended in salt solution, the growth from six tubes being used. I call special attention to this large dosage. The throat, tonsils and nasal mucosa were thoroughly smeared with this suspension, an ordinary throat swab being employed for this purpose. On the second day, almost forty-eight hours after the inoculation, the patient complained of a chilly sensation, a cold sweat, some headache and weakness. His temperature rose from normal (98.4 F. the day previous) to 100.2 F. The same evening it registered 100.1 F. The next morning it was normal again, but rose during the day to 99.5 F. The third day his temperature was practically normal and continued so from that time on. He complained somewhat of a headache and of feeling unwell, and on the second morning said he coughed a little. His throat, on examination when the first symptoms appeared, was slightly hyperemic; the next morning there was present a thick layer of mucus on the pharyngeal wall, and from this time on he coughed, or rather hacked up large quantities of a stringy, tenacious, slightly purulent mucus. This condition continued, becoming gradually less marked, but was still apparent at the end of four weeks. This cough was not spasmodic; it did not resemble pertussis. The leukocyte count on the second day was 9,200. Clinically there was little resemblance to influenza.

Bacteriologic examination of the mucus from the throat, obtained on the first day of symptoms, revealed almost a pure culture of the influenza-like bacilli. They were present both in the throat and on the nasal mucosa in enormous numbers. Direct smears of the expectorated mucoid sputum showed practically no other organism. They were identical in every detail with the organism inoculated. Examinations of the throat were made every few days for four weeks, after which time the patient was not accessible. The number of influenza organisms present became gradually less, but at the end of that time they were still present in considerable numbers. There were no complications.

This experiment shows that when Pfeiffer's bacillus is placed in the throat in large numbers it may grow for a long time and cause definite symptoms. These symptoms, however, do not indicate any specific infection; and this, it seems to me, is quite in accord with the fact that these bacilli are found so often in the throats of persons suffering with almost any respiratory infection. The experiment further shows that these bacilli are at least not always harmless saprophytes, and at times are capable of causing reactions which, though not specific in character, might modify secondarily a primary infection.

David J. Davis, M.D., Chicago.
Professor of Pathology, University of Illinois College of Medicine.

MUTUAL RECOGNITION OF MEDICAL DEGREES IN NORTH AND SOUTH AMERICA

(Translation)

To the Editor:—I have received the third number of the Spanish Edition of The Journal, and I have been most favorably impressed with its contents. It furnishes a most complete review of medical science, and gives a clear insight into the fraternal spirit which pervades the medical profession throughout the world. The world-wide scope of your publication gives it a position of advantage over local journals, especially over those whose main purpose seems to be the advertising of certain products.

Could you not inaugurate a movement which would include South America, Central America and North America, with the object of bringing about mutual recognition of medical degrees in all North and South American countries? The time has come when the reasons which may have existed in the past for national control of medical degrees no longer obtain, in view of the restricted privileges to which the holder of such degrees is entitled.

I base my opinion on the following considerations:

1. Medical science is universal.

2. The studies that constitute a medical course are practically identical everywhere, and the slight variations do not alter the basic scientific principles.

3. Physicians from all the American republics have exercised their profession with marked success on the battlefields and in the hospitals of Europe—is, then, their competence limited to war times?

4. There is reciprocity between several republics of South America: Argentina, Uruguay, Paraguay, Bolivia, Peru and Ecuador. Why not extend reciprocity to the other republics?

5. Physicians are especially fitted to give the highest expression to the fraternal spirit because of the peculiar character of their profession and owing to the fact that the medical works which they study in common constitute a strong natural bond.

6. The time is near when the medical profession throughout the world will be regarded by the various governments as an indispensable counselor. Why not let North and South America pave the way? Some common agreement must soon be reached with regard to the air, the water and the land, since micro-organisms are transmitted by these mediums. Then again, the medical profession of Pan-America must be the exponent of great social reforms, especially those of a humanitarian nature.

7. If preventive medicine and intellectual and social reciprocity are to rest on a solid foundation, it is essential that

mutual recognition of university degrees, especially medical degrees, shall be established without delay throughout Pan-America.

I invite your consideration of these ideas which I have jotted down as they occurred to me. It is my opinion that the American Medical Association is the body best fitted to launch this vast movement which will prove so eminently useful to the entire world. For this reason the physicians and the medical faculties of the United States ought to secure the opinion of their government, and if it approves the idea, an appeal should be made to each one of the American republics.

Why do we remain so distant? Why do we not know each other better, since a better acquaintance will promote the welfare of the countries in which we live and in which we are working to prevent and cure disease?

Dr. F. Vallés Vargas, Buenos Aires.

[Comment.—We are, of course, in sympathy with the lofty and far-reaching aims of our South American correspondent. It must be pointed out, however, that the goal he has in mind can be reached only by long and persistent labor, and that there are serious obstacles in the way. From our State Board Number, it will be seen that reciprocal relations are not yet an accomplished fact even among all the states in this country. In addition, before any such vast plan can be taken up, it will be necessary to have full information as to the character of medical education in all the countries involved, which may require an inspection of the medical schools, and some sort of uniformity established in the medical curriculums. With this end in view, the Council on Medical Education has been trying for some time to get data for Latin American countries similar to that now available for the United States. While this information has been forthcoming from some countries, it is still lacking for others; and we hope that the letter published above may serve to stimulate interest in this matter and make easier the collection of information on medical education in South America. The only countries from which such information has been received are Argentina, Bolivia, Brazil, Columbia, Mexico and San Salvador, and for some of these the information is quite incomplete.—Ed.]

PRAGUE FOR POSTGRADUATE MEDICAL EDUCATION

To the Editor:—Last January I wrote you from Prague, informing you that I had been located in France for six months, being associated with the Czecho-Slovak army, having charge of the American Red Cross Hospital in Cognac; also that early in January the convalescent men were ordered back to their homes in Prague, and that I was asked to accompany them.

After reaching Prague, I gave up my position in the hospital and assumed another duty, which I consider to be of great importance both to the United States and the Czecho-Slovak Republic, especially from the medical point of view.

I proposed to look into the possibility of organizing a clinic for the development of specialists at the University of Prague along lines similar to those formerly held in Vienna and Berlin; knowing that for some time to come the medical men from the United States would not be going back to these German cities.

The surgeon-general of the Czecho-Slovak government believed this to be a good idea and consequently ordered me on a "Special Mission" to the United States to invite medical men who desired to come to Prague to study and to explain what they had to offer.

Feeling that this matter could be enlarged on, I asked to be allowed to study the situation in the other allied countries and therefore made a trip to Italy (Rome), France (Paris and Lyon) and England (London). In these cities I studied carefully the possibilities of medical education and believe that in London is the future for such education abroad.

I hope I may have the opportunity of presenting the results of my investigations in these different cities, comparing them, one to the other, as well as all of them to our own postgraduate schools.

When I reached London, I examined The Journal at the library of the Royal Academy of Medicine, but found that the letter which I had sent from Prague had not appeared. Thinking that it might have been lost in the mails, I write this one, because I believe that the medical men in America are interested.

There are several men from America in Europe working along the same lines, among others Colonel Lloyd of New York, Capt. Lee Mastin Francis of Buffalo, also Dr. Franklin of London, England. In fact there are classes already doing good work, both in Paris and London.

Joseph E. Beck, M.D., Chicago.
Lieutenant-Colonel, Medical Corps, Czecho-Slovak Republic.

COMPULSORY DISPENSARY SERVICE

To the Editor:—Cooperation has become the watchword of our time. It might be considered by those who busy themselves particularly with the welfare of the people and of the medical profession, whether or not much good could be accomplished by obliging every physician in a community, whenever it can be done, to fill a hospital or dispensary appointment. This should not be a matter of privilege but a matter of duty. It would work out to the benefit of the public, as well as of the individual physician, who would enjoy a continuous postgraduate course. The details might be worked out by the American Medical Association. I respectfully submit this suggestion.

Emil Amberg, M.D., Detroit.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SIOMINE

To the Editor:—What, if any, advantages has siomine over potassium iodid?

H. F. W.

Answer.—The advantage claimed for siomine over sodium iodid is that it can be administered in solid form, thus avoiding the taste of iodids which it is claimed is sometimes responsible for nausea. The following statement of the action and uses of siomine appears in New and Nonofficial Remedies, 1919, p. 146:

> Siomine is decomposed in the intestine with formation of hexamethylenamine and iodide, the rate of absorption and excretion being essentially the same as that of inorganic iodides. It therefore produces the effects of ordinary iodides, from which it differs only in that it can be administered in solid form. The administration of siomine provokes the luetin reaction.
>
> No therapeutic claims are made for the hexamethylenamine component of siomine, this being present only to render the substance insoluble.
>
> While ordinarily the hexamethylenamine content of siomine may be ignored, the drug should be discontinued if any signs of hexamethylenamine intolerance should arise, such as vesical irritation or hematuria.

COLLOSOL MANGANESE

To the Editor:—Has anything been published on the efficacy of "Collosol Manganese" in malaria? I recently read the Council's report which indicated the fakishness of the "Crooke's Collosols," but I also was told that the War Office of England had requested a study to be made of colloidal manganese in malaria.

J. B., Columbus, Ohio.

Answer.—Stephens, Yorke, Blacklock, Macfie, Cooper and Carter report in the *Annals of Tropical Medicine and Parasitology* (Feb. 28, 1919, p. 345) the results of their investigation for the English government and conclude: "Collosol Manganese in the doses used is of no value in the treatment of simple tertian malaria."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

Delaware: Wilmington, June 17-19. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Jacksonville, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

Georgia: Atlanta and Augusta, June 5-6. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 12. Sec., Dr. J. R. Judd, Beretania St., Honolulu.

Massachusetts: Boston, May 13-15. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Michigan: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 3-6. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

Missouri: St. Louis, June 9-11. Sec., Dr. George H. Jones, State House, Jefferson City.

National Board of Medical Examiners: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

Nevada: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

New Jersey: Trenton, June 17-18. Sec., Dr. Alex. MacAlister, 438 E. State St., Trenton.

New York: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

Ohio: Columbus, June 3-6. Sec., Dr. H. M. Platter, State House, Columbus.

South Carolina: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 13-14. Sec., Dr. A. B. De Loach, Exchange Bldg., Memphis.

Virginia: Richmond, June 17-20. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

Vermont February Examination

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the oral, practical and written examination held at Burlington, Feb. 11-13, 1919. The examination covered 12 subjects and included 90 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. One candidate was licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University		(1911)	84.1
New York Homeo. Med. Coll. & Flower Hosp.		(1910)	86.1
University of Vermont		(1918)	88.1

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
Long Island College Hospital		(1894)	U. S. Army

Michigan February Examination

Dr. Beverly D. Harison, secretary of the Michigan State Board of Registraion in Medicine, reports the written examination held at Detroit, Feb. 19-20, 1919. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Twenty-five candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Detroit College of Medicine and Surgery		(1919)	76.3, 80.1, 81, 81.4, 81.7, 82, 82, 82.3, 82.9, 83.1, 83.7, 83.9, 84, 84.4, 84.6, 84.6, 84.6, 84.9, 84.9, 85.1 85.6, 86, 86.3, 86.9, 87.2.

Utah Reciprocity Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports that 6 candidates were licensed through reciprocity at the meeting held Jan. 6, 1919. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1918)	Illinois
Rush Medical College		(1883)	Iowa
Indiana Medical College (Purdue Univ.)		(1906)	Indiana
Harvard University		(1916)	New York
Columbia University		(1918)	New York
Jefferson Medical College		(1898)	Penna.

Social Medicine, Medical Economics and Miscellany

THE PSYCHOLOGY OF PACIFISM

EDGAR JAMES SWIFT, PH.D.
Professor of Psychology and Education, Washington University
St. Louis

Crises reveal mental disorders that pass unnoticed in peaceful times. Through uneventful days the mind pursues its placid course, unchallenged. But when great questions stir the people and issues must be faced, then ability to see things in their right proportion is a rigorous test of sanity. "We are all mad, but I know it," Edward Fitzgerald once said, and perhaps the difference between those whose thinking is incurably "deranged" and others for whom the prognosis is favorable lies in just this knowledge of the waywardness of the human mind. None of us, probably, are hopelessly sane; but perfect assurance and complacency in the verity of one's beliefs greatly reduce the prospect of recovery.

Crises also disclose the content, or lack of content, of human minds. They compel men to find themselves. A great issue is an amazingly keen scout which searches the mind for hidden defects. It is like a chemical that forces precipitation. It analyzes human minds. "The moment when great spirits reveal themselves is when everything is lost."

When a comparatively small group asserts its wisdom against the nation, these men and women are either geniuses or they are suffering from disturbance of mental poise; and probably no one would be inclined to give pacifists the former distinction. What, then, is the explanation of their refusal to cooperate in a war that was so clearly a defense against future aggression? Why did men and women, some of whom are disconcertingly capable in other matters, stand in the track of a great national movement?

This question would not be worth asking did it relate merely to the crisis from which we have just emerged. The war is won. The hands of the clock always move forward. Pacifists were only specks of dust in the timepiece of civilization that made the winning of the war a little late. There is, however, danger of their obstructing the machinery of progress in other matters. Pacifists are not so much individuals as they are a state of mind. And this state of mind is worth examining because it has certain interesting psychologic features, and threatens social danger.

The instinct of self-abasement describes one class of pacifists, pacifists not merely in their attitude toward the war which has just ended, but toward all questions that threaten social or business interests, questions that imperil personal relations or preferment. These are the people who can never be induced to take a positive stand regarding matters that stir the community or the nation. Great ideas never grip them. They are incapable of tremendous enthusiasms. They may be convinced, but they request that their views be not made public. They cannot take a definite stand, and act.

Self-abasement is only a euphemistic way of putting an unlovely fact. Tell a man that he has the self-abasement attitude, and he will feel that you are complimenting him for his humility. Call him a coward, and the consequences will depend on the quantity of self-assertion combined with self-abasement in his personal formula.

Yet many of those who suffer from self-abasement are not conscious cowards. Indeed, they would indignantly deny the charge, and justly. For they find satisfying reasons for their failure to act. "The people are not ready," they say. "They must first be educated to our point of view." Or, "I can do so much more good in other ways if I do not arouse antagonism. My services are needed and I must not jeopardize my influence." Perhaps, indeed, the motive is more personal. "Taking a definite stand will injure my social, business or political prospects, and one must consider one's own interests."

The ingredient of egoism in all these excuses is obvious. And egoism, paradoxical as it may seem, is both recessive and projective—self-abasive and self-assertive. It is a curious psychologic fact that one does what one wishes to do, and then finds reasons to justify one's actions. Many conscientious persons are cowards, but their timidity, overlaid with good intentions, is hidden from themselves.

Human conduct, however, cannot be adequately described in a single formula. Behavior is too complex for so simple a solution. Self-abasement does not explain the attitude of a rather large and exceedingly conspicuous group of pacifists. It does not account for those who jeopardized their social or professional prospects by advocacy of peace. It does not interpret the determination of those who have gone to prison for their belief. With these people pacifism assumes all the intensity of religious fervor, and it displays this enthusiasm and propagandic zeal for exactly the same reason that prompted the self-immolation of religious martyrs—a psychoneurotic condition that finds the most exquisite joy in suffering for a principle. The mental "set" of these pacifists is strikingly similar to certain borderland cases of insanity—cases in which the ego is immensely exaggerated.

Let us clear the ground that we may get a better view of the nature and variety of mental derangement. First of all, insanity is not always the result of cerebral disintegration. To be sure, changes in nerve cells and centers doubtless occur, but so they do when we think, and it is often quite as impossible to detect alteration in the former case as in the latter. Insanity is sometimes the expression of a perverse relation between ideas, or the manifestation of a persistent thought or belief which has become fixed in the mind. In either case the result is a "deranged" mental condition.

This "derangement" may be slight and harmless. The man himself, quite likely, is fully aware of his "peculiarity." It may be one of the good stories which he relates about himself. This, in itself, separates him from the actually insane. Yet the distinction is one of degree rather than of kind. It is a quantitative and not a qualitative difference. The man, for example, who always fears lest he may not have locked his office or safe, and who repeatedly tries the door to assure himself that it is secure, differs only in the degree of his mental peculiarity from another who believes that he is persecuted. Repeatedly trying doors, or washing one's hands for fear of contamination, are harmless diversions. There is no reason why one should not entertain oneself in these ways if one gains comfort and pleasure from the act. In their more lucid moments these people are quite aware of the absurdity of their fears. But a man who persists in thinking himself persecuted may commit murder in the belief that he is protecting his own life.

We have said that insanity is a matter of degree. There is no line of demarcation that separates the sane from the insane. The extreme cases, of course, can be distinguished, but those on the borderline cannot be definitely classified. We call men "queer," "cranks," "peculiar" and "eccentric," but do not confine them in an asylum. Quite likely they would pay us the same compliment of being "a little off." Both wisdom and eccentricity depend on the point of view. An insane man in an asylum frequently regards every one except himself as insane. The verdict of "strange," or "unbalanced," however, is not necessarily a purely subjective judgment. Perhaps the test is the amount and persistence of deviation from the general, though not local, consensus of opinion. This test, as we have said, would at times include geniuses because the mass of people are conservative. The consensus of opinion is that of the "safe," "sane" men. And in this rather common use of the word "sane," the distinction of which we have been speaking is emphasized. One of the peculiarities of those confined in an asylum, however, is that there is no consensus of opinion.

The relation between ideas may be likened, somewhat roughly, to the arrangement of the furnishings of a room. The same articles may produce an interesting, harmonious effect, or they may cause a feeling of hideous discord. Now the distinction between the sane and the insane often lies in the arrangement of ideas, and in the manner in which they follow one another. This is illustrated by the occasional characterization of a man as of unusual sanity. We mean that his thoughts follow one another in a manner so reasonable and enlightening as to impress us with his "good sense."

Finally, we should remember that causation is as true in psychology as in physics or astronomy. Were it not so the mind would be a succession of chance thoughts and emotions, without any significance for the mentality of the individual. Thoughts follow one another for a definite reason. They obey the law of association as truly as objects left unsupported conform to the law of gravitation. A physical law is a statement of the unexceptional behavior, under definite conditions, of objects or forces in the world or universe. And, in like manner, a psychologic law describes the behavior of mental processes. In neither case does the so-called law give the reason for the behavior. It merely states the observed fact. Now the same law of association applies to the insane as to the sane. The difference is that in the insane the systems of thoughts are more perverse and fixed.

The law of association reduces finally to neural habit—the tendency of nervous impulses always to follow the path which they have taken before and, consequently, to bring the same thoughts into mind. One need not go beyond one's own circle of acquaintances for illustrations. Real thinking is sufficiently rare to be surprising and refreshing when encountered. Most people make essentially the same reply whenever the idea or word that commonly calls it forth is heard. And the reason for this is their organized systems of thoughts.

Every thought that comes into the mind has a reason for its existence. This reason is expressed in the law of association, and association, as we have said, is the outward manifestation of neural habit—the tendency of one nervous impulse always to bring certain other impulses in its train. The brain, and with it the mind, has been organized in this way by experience.

Nervous impulses form, as it were, closed circles. Within a given circle there is activity, but this activity does not arouse action beyond the circumference. These restricted nervous impulses combine into a nervous complex whose inbreeding activity produces a mental complex of ideas, thoughts and interpretations. Related experiences and knowledge thus become organized into a fixed system of thoughts and opinions which decide the outlook and view of the individual regarding all questions on which these thoughts have any bearing. The reply that such a person will make when his favorite or antagonistic topic is broached can be predicted. He cannot think beyond his mental complex. This is the explanation of prejudice. It is the cause of definitely settled opinions.

Every one, of course, has three mental complexes—organized systems of thought—but the distinction between "cranks" and "sane" people lies in the firmness of their hold. It is not uncommon, for example, to hear that a man is "crazy" about golf or photography. Appreciation of a book, again, depends on the mental complexes of the reader. Some one has remarked that Bacon was right in saying that reading maketh a full man; but what he will be full of depends on the man.

Pacifists do not differ from others in having these mental complexes. They are natural to the human mind. One of the characteristics of sanity, however, is the ability to let the mind play around ideas so as to see things in their right proportions. Pacifists assume that no moral achievement is worth a fight in which men may be killed. That the "right" not to fight was won solely because other men have fought for this freedom, does not enter into their thinking. This bit of history is not a part of their mental complex. Yet it is doubtful whether there is any good so unadulterated as to contain no dross. Now exaggeration of one evil so as to obscure others indicates a poorly balanced mind. And pacifists allow the evils of war—which all admit—to blind them to the good that a particular war may bring. To say that all wars are bad is to fail to make distinctions. No two situations are exactly alike, and the capacity to observe differences and apportion values is a test of intelligence, and of sanity.

One of the defects of thinking is that these mental complexes become, at times, so saturated with emotion that one is blind to distinctions. The mental complex then becomes a sentiment, impenetrable to argument. Phrases now answer for argument, and the mind is narcotized with "the rights of conscience," "the right of free speech," "the right to refuse to commit murder," and "the peculiar rights of those who have given their sincerest devotion to advocating the institution among men of that kind of livable régime by the very nature of which the present world calamity would have been rendered well-nigh unthinkable." The affection of pacifists for "rights" is charmingly naive to those who observe that it is always their own individual rights concerning which they are so solicitous. They are belligerent in defense of what they call the inalienable rights of man—by which they mean themselves—but unconcerned for the rights of the community and the nation when these rights conflict with their personal sentiments. They enjoy the results of the battles which others have waged in the past for liberty and democracy, but refuse service themselves. And it is this devotion to their personal rights which reveals their mental incompetence.

Emotions relating to the self are the most persistent and controlling in certain forms of loss of mental poise. This influence is especially likely to occur when one meditates long over matters that arouse apprehensive anguish. Gradually and insidiously, under these circumstances, egoistic emotions assert themselves until they pervade the entire content of the mind.

Now there is a group of pacifists in whom egoism has played a dominating rôle in the organization and fixing of their mental complexes. The members of this group have been conspicuous and influential because, in other matters, they have displayed ability, and some of them have achieved reputation. Indeed, it is largely because of the distinction which they have won that their thinking concerning the ethics of war has gone astray. Their emotions of self-esteem have become so swollen that they have obstructed the paths which nervous impulses underlying thinking must traverse. These people do not see enough in pacifism to puzzle them and stimulate reflection outside their organized systems of thoughts. In their placid self-assurance, the most complex problems with which the world was ever confronted are perfectly simple and clear. These pacifists bear with marvelous fortitude the threatened loss of all that past wars have won. And they face this prospect calmly because of the perfect confidence in their own judgment which self-esteem has imparted. They bathe in the waters of self-complacency and luxuriate in the delightful serenity that egotism imparts, and which causes one to feel that "the diviner part of one's nature is paramount."

Evidence of the exaggerated ego, which, at times, equals that of megalomaniacs, is given in the writings of some of these pacifists. We are informed, for example, by "Thirteen Conscientious Objectors and Their Champions," in one of our leading journals, that "in the evolution of the human mind we discover a gradually *widening* hiatus between physical competence and intellectual moral competence." And then the thirteen signers of this remarkable communication modestly admit, "We possess only intellectual and moral competence."

These same thirteen men apparently represent a distinctive class of humanists of unusual clarity of vision, whose wisdom society is in danger of losing. For, the communication continues: "The tremendous enterprise of recreating out of bloody *chaos some new*, reinspired internationalism will be the order of the day. Who is better fitted for that reconstructive task than those humanists now in imminent danger of being bullied out of existence because their visions and their faiths extend beyond the time of bloody chaos."

This peculiar, unappreciated "vision" is a common characteristic of those whose mental poise deviates slightly from normal sanity. The full current of self-esteem, which saturates their mental complexes, controls thought and action. Even one of the "sanest" of this class of pacifists, one of national reputation whose ability in social service is widely recognized, is convinced of the "spiritual worth" and clearer vision of the pacifists who, "seeing that which is invisible to the majority of his fellow men, still asserts his conviction and is ready to vindicate his spiritual value over against the world."

Vision, however, is not the only asset of these pacifists against the intellectual bankruptcy of the world. They alone keep their minds flexible, their reason clear and unprejudiced. "Is there no place left, then," one of their prominent writers cries, "for the intellectual who cannot yet crystallize, who does not dread suspense, and is not yet drugged with fatigue? . . . The intellectual who retains his animus against war will push out more boldly than ever to make his case solid against it. . . . His mind will continue to roam widely and ceaselessly. The thing he will fear most is premature crystallization."

This unclouded vision and uncrystallized mind of pacifists catches vistas of truth which the myopic and inflexible minds of less gifted "intellectuals" do not glimpse. Emotions which confuse the meagerly endowed do not distort the view of "ardent spirits, the lovers of mankind." This is obvious, since "an intellectual class that was wholly rational," as a writer of national reputation styles pacifists, would have accepted the plan of the pacifists and "called insistently for peace and not for war." To explain "the American intellectual" who "has been rational neither in his hindsight nor his foresight . . . we must look beneath the intellectual reasons to the emotional disposition. It is not so much what they thought as how they felt that explains our intellectual class."

Finally, these self-assertive pacifists have the same close communion with God and divine guidance that the German kaiser enjoyed, until the recent defeat of his armies. And they have the same inside information regarding divine approval of their plans. Since God agrees with them, his wisdom is clearly demonstrated, and all that is necessary is to accept his cooperation. A pacifist, writing in a prominent journal, and obviously quite familiar with God's views, puts the crucial question: "Have you the nerve to stand alone against the mob, to look sentimental savagery in the face and say No? Come on then. You who have the courage and the vision to be the cowards and fools of God—fall in!"

Intimacy with the Giver of wisdom, and possession of absolute truth, are fortunately claimed by few. If they were the majority, society would be a huge open air insane asylum with the sane minority doubtful of their own mental condition. "Cultivation will breed in any man a certainty of the uncertainty of his most assured convictions," Samuel Butler once said, and sanity is not less "sane" than culture.

Mental complexes every one has, and probably it is best that it is so. Social stability requires a certain consistency of belief. When, however, these complexes become isolated and rigid, the thoughts which they produce do not take account of varying circumstances. They are not affected by changed conditions. They do not see distinctions. Then, if in addition, thoughts and opinions are saturated with egoism, their possessor sees through glasses of complacency that distort historical and contemporary facts. These people, when opposed, believe themselves misunderstood and unappreciated, because self-esteem makes their beliefs the center from which truth radiates. Everything is wrong that does not coincide with their egoistic vision. "Considering myself as the instrument of the Lord, without being misled by the views and opinions of the day," the German kaiser once said, "I go my way alone for the prosperity and peaceful development of our fatherland." "Fall in," says the pacifist, "you who have the courage and the vision to be the cowards and fools of God." And the kaiser is known to be a megalomaniac.

The Medical Congresses at Rio de Janeiro

The *Revista Medica del Uruguay* gives an account of the Uruguayan delegation to the congresses at Rio de Janeiro which had to contend with the epidemic of influenza that prevailed in the city at the same time. The first ceremony was the inauguration of the new Facultad de Medicina, a splendid structure, only part of which is completed, but it is enough to house the medical school. Dr. A. de Castro related the history of the old and the new medical school, and the dean of the Montevideo Facultad de Medicina broached the project of the publication by all of a great practical manual of South American pathology, to be collaborated in by all the countries represented at the congress, the scientific institutions of Brazil to have charge of the organization of the necessary work. This project was officially approved later by the congress, the work to be known as the "Tratado de Patología Sudamericana." The inaugural meeting of the congress was held, October 12, in the Teatro Municipal, Prof. M. Couto presiding. The congress of dermatology and syphilography passed a resolution of congratulation and applause for Uruguay because it was the first country in South America to adopt prophylactic measures against venereal disease. At the concluding plenary session, a resolution was adopted calling for compulsory vaccination of cattle against anthrax in all the countries represented at the Conferencia de Higiene. Dr. Bachmann, the president of the Uruguayan delegation, invited the next congress to convene at Montevideo, and it was resolved that the committee of organization should be composed of the dean of the Montevideo faculty with the cooperation of the delegates there present. The tenth day after the arrival of the delegation a visit was paid to the Instituto Oswaldo Cruz which is in a suburb, about 20 kilometers from Rio de Janeiro. To one of the assistants, Dr. Machado, who was present, Dr. E. Espiro, in the name of the Consejo de Higiene of Montevideo, presented a tablet dedicated to the memory of Oswaldo Cruz. The festivities and banquets which had been planned for and by the visiting delegations were all abandoned on account of the epidemic.

New German Ordinances for Venereal Disease Control

The following is a translation of the text of two German ordinances with regard to venereal diseases recently published in the Medical Supplement compiled by the Medical Research Committee of Great Britain:

No. 6587. Ordinance for the combating of Venereal Diseases of Dec. 11, 1918. Reichsgesetzblatt, p. 1431.

For the purpose of combating venereal disease the following ordinance is issued:

No. 1. Syphilis, gonorrhea and chancre are venereal diseases within the meaning of this ordinance, irrespective of the question as to what parts of the body are affected by the symptoms of the disease.

No. 2. Any person suffering from a venereal disease in whose case the danger of his (or her) spreading the disease exists may be compulsorily subjected to medical treatment, and more particularly may be taken to a hospital, if this appears to be required, for the purpose of efficiently avoiding the propagation of the disease. Medical (or surgical) action involving serious danger to life or health is not permitted except with the patient's consent. The method for providing the expenses is determined by state law.

No. 3. Any person having sexual intercourse with another, notwithstanding the fact that he (or she) knows, or must assume in the circumstances, that he (or she) is suffering from an infectious venereal disease, is punishable with imprisonment for a period not exceeding three years, unless the general penal law (in view of the special facts of the case) imposes a heavier punishment.

So far as spouses or persons betrothed to one another are concerned, a prosecution is not to take place except on application (on the part of the aggrieved person). The prosecution is barred after the lapse of six months.

No. 4. Any one who medically examines or attends a person suffering from an infectious venereal disease shall give information to such person as to the nature and infecious characer of the disease, and as to the fact that the act referred to in No. 3 is a penal offense.

Berlin, Dec. 11, 1918. The Imperial Government,
Ebert, Haase.

The Secretary of State for the Interior,
Dr. Preuss.

No. 6589. Ordinance in respect of the care to be given to military persons suffering from venereal diseases of Dec. 17, 1918. Reichsgesetzblatt, p. 1433.

By virtue of the decree of the Council of Delegates of the People as to the formation of the Imperial Office for Economic Demobilization (Demobilization Office), dated Nov. 12, 1918 (Reichsgesetzblatt, p. 1304), the following ordinance is issued:

No. 1. (1) The name of any person discharged from the Army or Navy in whose case a venereal disease has been ascertained during the present war shall be notified by the competent military authority to the state establishment for national insurance in the district in which his new or last known place of residence is situated, in order that he may receive further medical care. Any person belonging to the Army or Navy who, without being formally discharged, remains absent from his unit is to be treated like a person discharged from the Army or Navy.

(2) The provision of subs (1) applies, *mutatis mutandis*, to any person who, during the present war, has stood in any relation of contract or service to the belligerent army, or has in any other manner remained with or followed such army.

No. 2. So far as the communications prescribed by No. 1 are not required on medical grounds, the administrative authorities of the Army or Navy may, subject to the consent of the Imperial National Insurance Office, refrain from making them.

No. 3. This ordinance comes into force on the date of its publication.

Berlin, Dec. 17, 1918.
Imperial Office for Economic Demobilization,
Koeth.

Book Notices

Principles and Practice of Infant Feeding. By Julius H. Hess, M.D., Major, M. R. C., U. S. Army, Active Service, Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Cloth. Price, $2 net. Pp. 338, with illustrations. Philadelphia: F. A. Davis Company, 1918.

Infant feeding is of two types, natural and artificial. The tendency at the present time is to place the greatest stress on breast feeding and to offer artificial feeding as the logical second choice. Dr. Hess wisely uses almost one half of his book in discussing breast feeding. Although generally known to be the natural and ideal method for the infant, this subject has not received the attention in teaching which it has deserved. It is discussed here in great detail, the author considering explicitly all the possibilities and complications which may arise. He discusses maternal nursing and wet nursing in separate chapters, the latter being one of the most comprehensive that is available on this subject. In the section on artificial feeding the author does not adhere to any individualistic feeding method with fixed formulas; he is more concerned with the presentation of principles—adapting the food to the individuality of the infant rather than to that of the pediatrician. The fourth section concerns the nutritional disturbances. Outside of underfeeding, these are chiefly the idiosyncrasies of the infant to various individual constituents of its diet. The author is direct in his statements and his book will be found readily understandable by any physician who has the fundamental knowledge necessary to the modern practice of medicine. One of its most valuable features is an extensive appendix containing the formulas of the most widely known baby foods, directions for the preparation of various special mixtures and diets, a well illustrated article on the care of bottles and nipples, and numerous hints to answer the many questions with which mothers perplex the general practitioner. This is assuredly one of the most practical books available on infant feeding.

Principles of Bacteriology. By Arthur A. Eisenberg, A.B., M.D., Director of Laboratories, St. Vincent's Charity Hospital. Cloth. Price, $1.75. Pp. 198, with illustrations. St. Louis: C. V. Mosby Company, 1918.

It is difficult to write in an elementary manner and avoid loose statements. In trying to condense the subject of pathogenic bacteriology to 200 pages for the use of nurses in training, the author has at times not been able to circumvent this difficulty. In general, the material is well chosen for instructional purposes, but it would have been better to expand the discussions of the more common diseases and omit the rarer ones and the essentially animal infections. The paragraph on the paratyphoid group is certainly too brief, while symptomatic anthrax might have been left out. The four sentences on *Bacillus botulinus* do not give a correct impression. The chapters on bacteriologic technic contain well selected and adequate material.

Medicolegal

Delaying Too Long Sending Patient to Eye Specialist

(Beardsley v. Ewing et al. (N. D.), 168 N. W. R. 791)

The Supreme Court of North Dakota affirms a judgment in favor of the plaintiff for $7,933.50, for alleged negligence in the treatment of an injured eye, wherein it appeared that the patient should have been sent to an eye specialist at least twenty-four hours before he was. The court says that the plaintiff, while engaged at his occupation as an engineer, December 19, got a cinder in one of his eyes. At about 11 o'clock that night, after he had completed his run, he endeavored to remove the cinder by taking an ordinary match, burning the head off, and attempting to brush the cinder out with the charred end of the match stick. Failing in this, the next morning he went to the offices of the defendants, where the cinder was removed. His eye was not bandaged, and when the defendants offered him a prescription for a boric acid solution, he replied that he could get it himself without a prescription. On the day following he went again to the offices of the defendants. In treating the eye this time a bandage was applied and the plaintiff was given a prescription for a solution of argyrol. He returned at about 8 o'clock on the morning of the 22d, when he was told by one of the defendants that he should go at once to the head eye surgeon of the railway company in Minneapolis, where, at about noon of that day, the eye was promptly treated. The scar resulting from the operation, which was rendered necessary by the infection, was located directly over the pupil, and resulted in total blindness in the affected eye.

The principal error relied on for a reversal of the judgment was the refusal of the trial court to direct a verdict for the defendants, on the gound of the insufficiency of the evidence to establish the negligence of the defendants. There was considerable conflict in the testimony as to the time when the infection on the eyeball became visible; also as to whether or not the plaintiff had been advised early in the progress of the treatment that he should go to a specialist. So far, however, as the evidence on these matters might be regarded as having a bearing on the verdict of the jury, this court must, on this appeal, regard the plaintiff's version as being true. Moreover, it should be observed that the circumstances strongly supported his version as to the early appearance of the infection. Both the plaintiff and his wife testified that there was a small yellowish spot on the eyeball on the morning of the 21st, and both testified that one of the defendants stated on that morning that the eye was infected; that the defendant also wrote a letter, in the following May, to help out in an insurance matter, stating that the eye showed some infection, December 20. The Minneapolis specialist testified that the infection from which the plaintiff was suffering was in the nature of a hypopyon ulcer, or one which forms pus in the anterior chamber of the eye; that the development of an ulcer of the particular class to which this belonged is ordinarily very rapid; and that the proper course for a general practitioner, after infection has been discovered, is to send the patient to a specialist, unless the pactitioner has confidence enough in himself to take care of it. He also testified that a general practitioner would be treading on pretty dangerous ground in taking chances on the spread of an infection after an ulcer of the cornea has developed. Considering his testimony in the light of the facts, including the fact that the infection first appeared, not over the pupil of the eye, but a little below, the court is satisfied that there was evidence from which the jury was warranted in finding the defendants negligent in not using the proper treatment at the proper time. They were not protected by the rule, which they sought to invoke, that a physician is held only to the exercise of the skill and learning of the profession generally in the community in which he practices, because, according to their own testimony, they recognized the necessity of more expert treatment than general practitioners were capable of giving. Under the circumstances, the advice to go to a specialist should have been forthcoming at least twenty-four hours before it was given; and the proper degree of care was not exercised in prescribing only boric acid and argyrol, when the danger of the spread of such an infection and the inefficiency of such disinfectants were known.

The court also holds that a layman is competent to testify to the size of an abscess which can be observed with the naked eye; and that certain improper suggestions of liability insurance were not reversible errors.

Unsuccessful Treatment of Fracture Without Roentgenogram

(De Bruine v. Voskuil et al. (Wis.), 169 N. W. R. 288)

The Supreme Court of Wisconsin not only reverses a judgment for $1,800 damages obtained by the plaintiff for injuries alleged to have been sustained by reason of negligence on the part of the defendants in the treatment of a fracture of the tibia of the plaintiff's left leg about 2 inches below the knee, but remands the case with directions to dismiss the plaintiff's complaint on the merits. The court says that the plaintiff was a woman 49 years old. The accident occurred, November 5. The defendants reduced the fracture and placed it in a fracture box in the ordinary way with Buck's extension, attaching a weight of 26 pounds. December 20, defendant Voskuil removed the apparatus, a part of the weight having been taken off a week previously; and he attempted to ascertain whether or not union had taken place, but desisted on account of complaints made by the plaintiff. He advised her to use her leg. He called again, December 27, and then discovered that there was no union of the fragments. He then advised an operation for the purpose of fastening the ends of the bones together. The plaintiff was taken to a hospital in Sheboygan, where another surgeon performed an operation, ten weeks after which the plaintiff returned to her home, with the bone united perfectly, but her left ankle stiff. It was undisputed that prior to the operation there was never any exudate on the ends of the bones.

There was no evidence to show that the bones were not properly placed in apposition to each other, and there was no evidence to show that the weights were not properly attached in the usual and customary way. If an expert could not say that the treatment was improper, on what ground could the jury arrive at that conclusion? The fact being established that there was no union, it was assumed apparently that it must be due to some negligent treatment. The evidence did not sustain that view. The entire case here rested on the testimony of a physician to the effect that he would have treated the fracture in another way. Physicians are not compelled to choose at their peril between two accepted methods of treatment. Statements of experts that they would have treated the fracture in some other way are incompetent.

The trial court correctly instructed the jury that:

> A physician and surgeon is not an insurer or guarantor of a cure. If the treatment in this case was such as physicians or surgeons of ordinary knowledge and skill of the same school of medicine, and practicing in the same vicinity, would have exercised under the same or similar circumstances, then the fact that a bad result followed from the treatment, if you find that that was the fact, is not in itself alone sufficient to charge the defendants or either of them with negligence.

The difficulty seemed to be that the trial court entirely ignored the undisputed fact that the failure of the fragments to unite was due to some cause with which the treatment administered by the defendants had nothing whatever to do; that is, the failure of nature to set up the healing process.

But there was one claim of negligence as to which there was sufficient evidence to sustain the finding of the jury, and that was that defendant Voskuil was negligent in not discovering the fact that the injury had not healed at the time of the removal of the extension apparatus, and in the defendant's further failure to call on the patient for seven or eight days thereafter. However, there was no evidence showing that this in any way contributed to or was a factor in producing the injury complained of.

At the time of the plaintiff's injury there was no roentgenographic apparatus at or near the place where she lived, and there was no suitable electrical current available. Neither did it appear from the testimony that, had a roentgenogram been taken during the treatment, it would have shown that no callus was being formed at the point of fracture. Nor was there cited any case holding that it is as a matter of law negligence for an attending physician and surgeon to fail to avail himself of the use of a roentgenographic apparatus in the case of fracture, and on the facts shown here this court cannot so hold, particularly as it was comparatively easy to determine whether or not the ends of the bones were in apposition. It is clear that under the facts in this case the failure to procure a roentgenogram during the course of treatment did not amount to negligence or unskilful treatment.

Validity of Contract Not to Practice in County

(*Rowe v. Toon* (*Iowa*), *169 N. W. R. 38*)

The Supreme Court of Iowa, in affirming a decree enjoining the defendant from practicing medicine and surgery in a county from which he had agreed to retire from practice for a period of ten years, and relinquish his business to the plaintiff, for a consideration of $1,000, declares it cannot say as a matter of law that the restriction, either as to territory or to time, was unreasonable. It is not an unheard of or very unusual thing for a well-established physician of good repute to enjoy a practice coextensive with his county, and even a young physician, whose present practice is comparatively limited, both in the number of his patients and in the area in which he finds his patients, may yet reasonably hope, if well qualified, to extend his practice much beyond the immediate vicinity of his office or home. The contract sued on not being unreasonable on its face, the plaintiff was not required to negative the existence of possible conditions rendering it void or voidable.

The position could not be successfully maintained, which the defendant took, that, unless the seller is disposing of some tangible property, like an office or residence or stock of instruments, medicines or supplies, used by him in and about his business, there is nothing to support the ancillary agreement to retire from his practice in that neighborhood. It is too clear for argument that a person having an established practice as a lawyer or physician may sell his business, and by binding himself to refrain from all competition with his purchaser for a reasonable time, and within reasonable territorial limits, he can vest his purchaser with a valuable opportunity, and that such an agreement is not to be condemned or avoided as without consideration, or as being forbidden by any sound principle of public policy. True, the lawyer cannot (in this way) sell his clients, or the physician sell his patients or their individual patronage or their individual good will; yet he can, by such sale and by an honest observation of his covenant not to embarrass his purchaser by competition, confer on him a real advantage and hasten the acquisition of business by him on his own account, and the courts should be slow to establish any rule or precedent by which any person can make a pretense of such sale, and, having received the stipulated price therefor, immediately repudiate its obligation and take from his purchaser the sole and only consideration on which he parted with his money. Had the defendant remained in the county and withdrawn from practice therein as he agreed to do, the plaintiff would have had no ground for complaint.

Nor was the contract between the parties and the payment of money in pursuance of an unlawful conspiracy in restraint of trade, as was argued, because, when the plaintiff returned to complete the deal with the defendant two months after it was made, and found another physician had settled in the town, the agreement was modified or supplemented by one for a nominal partnership of the plaintiff with the defendant, and for the defendant to remain a while longer to introduce the plaintiff to the people and aid him in getting started.

Neither was there any merit in the defense that the plaintiff had never complied with the statutes of the state regulating the practice of medicine, and the court should deny him any relief, because he had mistakenly filed his certificate from the state board of medical examiners for record with the clerk of the court for that county, instead of with the recorder of the county. It might be that by such mistake, though committed without conscious wrong, the plaintiff technically became chargeable with a misdemeanor, and rendered himself unable to enforce by law the collection of fees earned before the mistake was corrected; but from the outset he possessed the right to correct the filing. It did not lie in the mouth of the defendant, having sold his practice and received his pay for it, to declare his contract void because the plaintiff, in entering on the practice so purchased, mistakenly filed his certificate in the wrong office.

As to the sale of a professional practice, attacked ethically, it is answered that, while there has been some apparent divergence, and perhaps there have been some inconsistencies, in the practical application of the rule to particular cases, there is no substantial conflict anywhere on the proposition that a professional practice is a lawful subject of sale, and that equity will protect the purchaser against the competition of a seller who has contracted to surrender the good will of his business to the buyer.

Unsuccessful Operation for Cataract

(*Curran v. Holt* (*Maine*), *104 Atl. R. 579*)

The Supreme Judicial Court of Maine overrules a judgment of nonsuit in this action against a surgeon for alleged malpractice in connection with an unsuccessful operation for cataract. The court says that the plaintiff was treated by the defendant from November, 1911, until January, 1913. Jan. 28, 1913, the defendant performed an operation for cataract on the plaintiff's right eye. The operation was not successful, and sight was not restored. As the left eye subsequently became involved from what was apparently sympathetic inflammation, the right eye was removed by the defendant, April 14, 1913. This removal, however, did not allay the trouble with the left eye, and, after further treatment for several months, vision in that eye was also lost. The plaintiff in his writ alleged many negligent acts on the part of the defendant, which he said might have produced the blindness. These he summarized in his brief as follows:

> Such as general negligence; that the incision on the eyeball of the right eye was within what is called the danger zone; that the defendant did not make a proper diagnosis of the eyes, and did not understand the real condition of the eyes before he operated; that he did not use proper methods in preparing the eye for the operations, and in treating the eyes before and after the operations of Jan. 28 and April 14, 1913.

The evidence introduced by the plaintiff, including that of an eye specialist, failed utterly to substantiate a single one of the many claims set forth in the writ. True, the operation proved unsuccessful, and on that fact alone the plaintiff seemed to rest his case. But that was not sufficient to establish negligence on the part of the operator. The surgeon cannot insure recovery, and the testimony showed that, with all due care, loss of sight results in 5 or 6 per cent. of the cases in operations for cataract, depending in large measure on the condition of the patient. It was shown here that the plaintiff's trouble was of long standing. His vision had been more or less affected for forty years.

It was not claimed that the defendant did not possess the ordinary skill of members of his profession in like situation. The law required him to exercise that ordinary skill, and to use reasonable care and diligence in his treatment of the case, and his best judgment in the application of that skill to the case in hand. The evidence did not show that the defendant failed to measure up to the legal requirement in a single particular, either in the care and treatment prior to the operations, in performing the operations, or in the care and treatment subsequent thereto. The defendant was not called on to offer any testimony. A jury would not have been justified in drawing from the evidence an inference of legal liability on the part of the defendant, and therefore the nonsuit was properly ordered by the presiding justice.

Blood Pressure in Shock.—Clinical and experimental studies have demonstrated that a systolic pressure of 90 mm. Hg is the limit of safety for individuals suffering from the the effects of shock if aggravated by hemorrhage. This complicating loss of blood must be assumed to have occurred in all wounded men showing the shock syndrome in order to give the maximum opportunity for recovery to reach individual.—*Review of War Surgery and Medicine.*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anesthetists, Atlantic City, June 9-10.
Am. Assn. of Genito-Urinary Surgeons, Atlantic City, June 16-17.
Am. Assn. of Indust. Physicians and Surgeons, Atlantic City, June 9.
Am. Assn. of Pathologists & Bacteriologists, Atlantic City, June 16-17.
American Association of Physicians, Atlantic City, June 16-17.
American Climatological & Clin. Assn., Atlantic City, June 16-18.
American Dermatological Association, Atlantic City, June 16-18.
American Gynecological Society, Atlantic City, June 14.
American Medico-Psychological Assn., Philadelphia, June 17-19.
American Neurological Association, Atlantic City, June 16-18.
American Ophthalmological Society, Atlantic City, June 16-17.
American Orthopedic Association, Atlantic City, June 16-17.
American Otological Society, Atlantic City, June 16-17.
American Pediatric Society, Atlantic City, June 16-18.
American Proctologic Society, Atlantic City, June 7-9.
American Psychopathological Association, Atlantic City, June 19.
American Society of Tropical Medicine, Atlantic City, June 16-17.
American Surgical Association, Atlantic City, June 16-18.
American Therapeutic Society, Atlantic City, June 6-7.
Arizona Medical Association, Globe, June 2-3.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, June 5.
Congress American Phys. & Surgs. of N. A., Atlantic City, June 16-17.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Maine Medical Association, Portland, June 18-19.
Massachusetts Medical Society, Boston, June 3-4.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
National Tuberculosis Association, Atlantic City, June 12-14.
Nebraska State Medical Association, Lincoln, May 19-21.
Nevada State Medical Association, Lake Tahoe, June 20-21.
New Hampshire Medical Society, Concord, May 14-15.
New Jersey Medical Society, Spring Lake, June 24-25.
New York State Medical Society, Syracuse, May 6.
North Dakota State Medical Association, Grand Forks, June 18-19.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
Rhode Island Medical Society, Providence, June 5.
Texas State Medical Association, Waco; May 13-15.
Western Roentgen Society, Cleveland, June 5-6.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

April, 1919, **48**, No. 3

*Plethysmographic Study of Shock and Stammering. S. D. Robbins, Cambridge, Mass.—p. 285.
*Intravascular Fat in Relation to Experimental Study of Fat Embolism in "Shell Shock". P. S. McKibben, Baltimore.—p. 331.
*Action of Potassium Cyanid on Oxygen Consumption. II. Action on Planaria. L. H. Hyman, Chicago.—p. 340.
*Effect of Cyanids on Carbon Dioxid Production and on Susceptibility to Lack of Oxygen in Planaria Dorotocephala. C. M. Child, Chicago.—p. 372.

Plethysmographic Study of Shock and Stammering.—Thirteen graduate students or college seniors and ten stammerers were the subjects in Robbins' experiments. He found that shock and stammering are accompanied in every case by marked vasoconstriction. In a few cases this is preceded by a short, inconspicuous rise in the plethysmogram which is probably caused by arm movement. Vasoconstriction does not begin until about three seconds after the stimulus is given. Long stimuli are accompanied by greater vasoconstriction and slower recovery than are short stimuli. Compound stimuli are accompanied by greater vasoconstriction and slower recovery than are either long or short stimuli. The more intense the stimulus and the more unexpected the stimulus, the greater is the vasoconstriction, the more rapid the vasoconstriction and the slower the recovery. All the tables show marked individual differences even on the same record. The greater the vasoconstriction, the more is verbal imagery impaired.

Those subjects who experience the greatest vasoconstriction during shock and stammering also require the longest time for recovery. Marked peripheral vasoconstriction takes place more rapidly than does slight vasoconstriction. Stammerers as a class experience slightly greater vasoconstriction in shock than in stammering. The time of recovery is practically the same in both stammering and in shock. Those subjects in whom the fear of stammering is pronounced, however, experience greater vasoconstriction and slower recovery in stammering than in shock. Vasoconstriction continues throughout the stammering interval; if any vasomotor change accompanies normal speech, it is vasodilatation in a large majority of periods. Therefore, Robbins concludes that stammering and shock are induced emotional disturbances accompanied by the same vasomotor changes. His experiments confirm Bluemel's theory that stammering is caused by transient auditory amnesia in the auditory speech center brought on by cerebral congestion.

Intravascular Fat in Experimental Shock.—Free fat droplets, stainable with sudan III, scharlach R or osmic acid were found by McKibben in the blood vessels of the brain, lungs and other organs of the dog and the rabbit in considerable number. In the cat, although present, this intravascular fat seemed to occur in smaller amount than in the dog or the rabbit. Observations on dogs indicated that there were no quantitative or qualitative differences between the fat, recognized histologically, in the vessels of normal control animals and that demonstrated in dogs subjected to concussion or prolonged anesthesia. In cats it seemed probable that a rich fat diet increased the incidence and amount of intravascular fat demonstrated histologically.

Action of Potassium Cyanid on Oxygen Consumption.—An extensive review of the literature on the chemical, physiologic and pharmacologic action of the cyanids is given by Hyman. All of this literature supports the generally accepted opinion that the cyanids depress physiologic processes in general, and rate of oxygen consumption in particular. A large number of experiments are reported which prove that the oxygen consumption is decreased in the presence of potassium cyanid. The amount of decrease depends on the concentration of the cyanid, ranging from 80 to 90 per cent. in 1/2,000 molecular potassium cyanid to 5 to 15 per cent. in 1/2,000,000 molecular solutions. The decrease is independent of muscular or ciliary activity. It is entirely reversible, the animals being wholly uninjured by the cyanid and returning to their normal rate of oxygen consumption when the cyanid is washed out of them.

Effect of Cyanids on Metabolism.—The results presented by Child are far less striking than Hyman's data on the effect of cyanids on oxygen consumption, and are regarded as merely supplementary to them. Hyman measured oxygen consumption in the presence of cyanids, while Child has been concerned almost wholly with what remains of the effect after return of the animals to water. While all the data agree as regards the effect of potassium cyanid, they permit only certain general conclusions concerning quantitative differences in susceptibility; but these, so far as they go, are in complete agreement with the conclusions drawn from experiments of other sorts. Since cyanids decrease both oxygen consumption and carbon dioxid production, Child believes that the increase by cyanid in susceptibility to lack of oxygen can mean only that cyanid and lack of oxygen are to some extent additive in their action on living protoplasm, that is, their action must be in certain respects identical or similar in character.

American Journal of Public Health, Boston

April, 1919, **9**, No. 4

Infant Mortality in United States During One Year of War. F. S. Crum, Newark, N. J.—p. 241.
Present Status of Public Health Administration. O. Dowling, New Orleans.—p. 255.
Presence of Spore-Bearing Aerobic Gas-Forming Bacillus in Baltimore City Drinking Water. C. L. Ewing, Baltimore.—p. 257.

Rabelais'. Mention of the Muscles. D. W. Montgomery, San Francisco.—p. 636.
Experiences with Neodiarsenol (Canadian Neoarsphenamin): Two Hundred and Forty-One Injections Without Ill. Effects. H. Goodman, Camp Las Casas, Porto Rico.—p. 637.
Medical and Surgical Lessons of the War. Sanitation in War. G. G. Nasmith, Toronto.—p. 638.

Epidemic Encephalitis with Stupor.—Kennedy has seen seven cases of this disease. In all, the diagnosis has been manifest. Stupor, however, varied in degree and was absent in one, a girl of 16; in her case there was the usual history of onset with headache, vertigo, and diplopia over about a week's time, together with at present third and seventh nerve palsies, much increase in tendon tone, and pronounced coarse tremor of the right extremities. Another patient, a man aged 35, has no emotional stupor, but lies curled up in bed complaining of headache. He is fretful and irritable. He vomits from time to time and presents inability to look above or below the horizontal and lacks the power of visual accommodation. Kennedy is convinced that these are cases of the same disease as was described by Economo in April, 1917, in Austria; by Netter a year later in France, and at the same time by various British observers in England.

Michigan State Medical Journal, Grand Rapids

April, 1919, **18**, No. 4

Lethargic Encephalitis. E. W. Schnoor, Grand Rapids.—p. 141.
What Everybody Should Know about Cancer. J. H. Carstens, Detroit.—p. 145.
Report of Work Done for Michigan State Board of Health on Mental Conditions of Cases under Treatment for Venereal Disease. G. F. Inch, Kalamazoo.—p. 148.
Venereal Treatment of State Cases—Fairmount Hospital. W. den Bleyker, Kalamazoo.—p. 151.
Complete Muscle Operation in Primary and Secondary Perineorrhaphy Immediately Following Labor. C. E. Boys, Kalamazoo.—p. 153.
Situs Transversus and Extra-Uterine Pregnancy. S. Levin, Lake Linden.—p. 155.
Two Thousand Seven Hundred Sixty-Two Industrial Accident Cases Classified. E. I. Carr, Lansing.—p. 156.

New York Medical Journal, New York

April 19, 1919, **109**, No. 16

Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 661.
Operative Technic of Therapeutic Abortion. We E. Parke, Philadelphia.—p. 665.
*Human Serum in Treatment of Influenza Bronchopneumonia. E. W. Gould, New York.—p. 666.
Diagnosis and Treatment of Chronic Gonorrhea in Male. P. Goldfader, Brooklyn.—p. 667.
Chronic Prostatitis, Gonorrheal and Nongonorrheal. J. H. Frideman, New York.—p. 675.
*Craniocerebral Roentgenogram Meter. W. J. Manning, Washington, D. C.—p. 677.
Artificial Pneumothorax in Pulmonary Tuberculosis. L. S. Peters, Albuquerque.—p. 678. To be concluded.
Home Teaching for Shut in Crippled Children. D. C. McMurtrie, New York.—p. 680.
Clinical Notes from France. C. G. Cumston, Geneva, Switzerland.—p. 682.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 684. To be continued.

Human Serum in Treatment of Influenza Bronchopneumonia.—Under the jurisdiction of the United States Naval Hospital at New York, 842 cases of pneumonia have been treated by Gould and others. Three hundred and twenty have come under Gould's immediate supervision at the Naval Hospital. The mortality rate among these 320 cases has been 26.16 per cent. Many of the patients were in an advanced stage of the disease or even in a moribund condition on arrival at the hospital. Thirty cases of so-called influenza pneumonia were treated by the use of human serum from convalescing patients with a loss of only two cases. The rapid and complete subsidence of symptoms unusual in most cases of influenza pneumonia gave hope that a specific line of treatment had been found. The author was able to confirm the contention of Redden that the amount of lung involvement in the donor is necessarily a reliable criterion in determining the value of his serum. He is impressed with the belief that the human serum from convalescent pneumonias undoubtedly contains valuable antibodies, and that its use in cases infected with homologous strains will give satisfactory results; but with the present limited ability to isolate the infecting organisms of the donor and the recipient, the method cannot yet be placed on a practical basis where definite results can reasonably be expected. Furthermore, this method cannot be used except in large, well equipped hospitals where access can be had to many willing donors.

Craniocerebral Roentgenogram Meter.—This craniocerebral roentgenogram meter, designed by Manning, is intended to be used on the heads of persons suffering from depressed fractures or in other suspected fracture cases, inclusive of foreign bodies or projectiles being received or lodged within the wall of the skull. The intent of the device is to aid surgeons who have to deal with these conditions with graphic landmarks on the head that will guide them more or less and assist in locating a foreign body after a roentgenogram is taken by approximating the different centers with which they may come in contact. The device is very simple in its application, being somewhat in the form of a chain cap with spiral springs attached at each junction of the chain in order that it may adapt itself to various sized craniums or heads. In the event of a hematoma existing, one half of the chain can be raised and the lines carried over from the remaining half in position on the other side of the head.

New York State Journal of Medicine, New York

April, 1919, **19**, No. 4

Surgical Treatment of Unilateral Renal Tuberculosis: Importance of Early Diagnosis. H. L. Kretschmer, Chicago.—p. 119.
Hyperplastic Ethmoiditis: Report of Cases. J. L. Maybaum, New York.—p. 122.
Case of Traumatic Hysteria with Amaurosis. G. R. Hare, New York.—p. 130.
Diagnosis of Acousticus Tumor. I. Friesner, New York.—p. 130.
Relapsing Iritis: Report of Case. A. E. Davis, New York.—p. 132.
Controlling Milk Supply of a Small City. R. S. Breed, Geneva.—p. 134.
Transmission of Diseases of Cattle to Man Through Milk. V. A. Moore, Ithaca.—p. 138.
Treatment of Narcotic Addiction. C. F. Stokes, New York.—p. 144.

Ohio State Medical Journal, Columbus

May 1, 1919, **15**, No. 5

*Fracture of Skull—Diagnosis, Treatment and End-Results. W. D. Haines, Cincinnati.—p. 278.
Underlying Neuropathic State. W. H. Matchette, Greenville, Ohio.—p. 281.
Relation of Hematology to Surgery. E. R. Arn, Dayton.—p. 284.
*Spray Solution for Acute Rhinitis. J. A. Thompson, Cincinnati.—p. 286.
Case of Hysteria. J. L. DeCourcy, Cincinnati.—p. 287.

Fracture of Skull.—Emphasis is placed by Haines on some of the important signs of skull fracture. For instance: Some of the most extensive and fatal brain and cord lesions have followed injury wherein no fracture was found in the ward, by roentgen-ray examination or necropsy. Infinitely more will be accomplished for the patient by employing measures to relieve shock than by immediate operation, the one exception being the presence of active hemorrhage; and even here there is room for argument. Linear fractures of the skull with displacement should be placed under the caption of urgent surgery and dealt with accordingly. The dura is so closely attached to the bones at the base as to render fracture of the bone without rupture of this membrane almost impossible; and still such fractures *do occur*, and it is for this reason that one must be guarded in assigning a proper place to the absence of cerebrospinal fluid in the scheme of diagnosis. Escaping serum, following hemorrhage arising from uncomplicated rupture of the tympanic membrane or nasal mucosa, may present in mimicry of this system and lead to a grave error in the final conclusions. Notwithstanding the desperate conditions embodied in basilar fractures, about 50 per cent. of the patients, surviving the first forty-eight hours following receipt of the injury, make a final recovery. The treatment should be directed with a view of relieving shock, stopping hemorrhage, preventing infection, and controlling pressure.

Spray Solution for Acute Rhinitis.—The following spray solution is used by Thompson in cases of acute rhinitis:

atropin, ½ grain; epinephrin, 1 grain; menthol, 24 grains; camphor, 40 grains; oil sweet almonds, 2 ounces; liquid petrolatum, 6 ounces.

Wisconsin Medical Journal, Milwaukee

April, 1919, 17, No. 11

*Digitalis in Cardiorenal Disturbances. O. M. Layton, Fond du Lac.—p. 435.
Adequate Treatment of Syphilis. J. J. Seelman, Milwaukee.—p. 438.
*Atropin and Dextrose Solution in Treatment of Acute Intestinal Obstruction. A. J. Caffrey, Milwaukee.—p. 447.

Digitalis in Cardiorenal Disturbances.—The intramuscular and intravenous routes of administration of digitalis are favored by Layton in the cardiorenal conditions, because these patients so often have not only a gastro-intestinal tract which renders absorption and time effect of the drug uncertain, but they frequently demand immediate results which can only be obtained by these routes, but the oral administation may be used as soon as conditions warrant it. The degree of hypertension present in no way contraindicates the use of digitalis if indicated. In fact, the hypertension is a compensatory process to be maintained temporarily, at least. If the heart needs digitalis, the existing hypertension may be disregarded.

Treatment of Acute Intestinal Obstruction.—Caffrey reports two cases in which very favorable results were obtained from the intravenous use of glucose solution.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 29, 1919, 2, No. 3039

Disease and Diagnosis. H. Head.—p. 365.
*Medical and Surgical Work as Prisoner of War. A. T. I. MacDonald.—p. 367.
*Adjustment of Response to Nerve Stimulus in Voluntary Muscles. G. M. Levick.—p. 369.
*Study of Acute Rheumatism. F. J. Poynton.—p. 371.
Four Years' Work at an Ante-Natal Clinic. A. Crook.—p. 372.
Half a Century of Smallpox and Vaccination. J. C. McVail.—p; 373.
Herpes Zoster and Varicella. W. M. Gray.—p. 377.
Gonococcal Papilloma of Umbilicus. T. Anwyl-Davies.—p. 378.
Ciliated (?) Ameba in Liver Abscess. R. C. Watts.—p. 378.
*Primary Sarcoma of Prostate in Boy. E. Nicholson and E. M. Hainworth.—p. 378.

Medical and Surgical Work as Prisoner of War.—MacDonald was taken prisoner by the Germans in March, 1918. In this paper he gives an account of his individual experience and the professional work of the German army surgeons.

Voluntary Muscle Response to Nerve Stimulus.—This paper is based on the result of tests made on many hundreds of wounded men, in the electricity departments of two of the largest military orthopedic hospitals. Levick found that after injury to a motor nerve the muscles supplied by the injured fibers respond to stimulus with a contraction longer in duration than that of the normal muscle. This was observed in every one of the many hundred cases tested. Levick suggests that this lengthening of the contraction is due to hyperexcitability in the muscle following a definite sequence of events. When the stimulus from the upper motor neuron weakens or ceases, the anterior horn cells of the lower neuron become hyperexcitable, and the muscle tone is increased. When the nerve impulse is slightly retarded, the muscle responds with a slightly lengthened response; when the nerve impulse is further retarded, the muscle responds with a further lengthening of the response; when the nerve retardation reaches a certain point, the muscle reaches a limit of response beyond which it cannot go, and this response is the same in cases of severe nerve compression or of complete division of the nerve. After suture of the nerve, and its subsequent regeneration, response to faradic stimulus first appears in the muscle, proving the dawn of a new nerve supply. Then, after a period the muscle begins to respond first with a slight shortening of the contraction, and then, following the gradual establishment of nerve influence, with a gradual further shortening until, following the complete regeneration of the nerve, the muscle response is restored once more to its normal length. When the excitability of a lower motor neuron is increased, that of the muscle is reduced.

Acute Rheumatism with Pericardial Exudation.—Poynton cites the case of a girl, aged 17, the victim of acute rheumatism, with a heart injured by a previous attack, who passed through a second most severe one while under observation in the hospital. A general pericarditis with copious effusion developed, and the fluid withdrawn by paracentesis showed numerous minute diplococci, some in the fluid, many more carried up in numbers by the polymorphonuclear leukocytes. The stage of the illness was one in which the acute phase was subsiding, but death was threatened from mechanical embarrassment. This patient did not die, the effusion did not return, the temperature fell, and eventually the recovery was so good that she left the hospital able to walk short distance, and with a compensated mitral lesion. This is the first case in which Poynton has been fortunate enough to obtain a living pericardial exudation in man in this particular phase, and it completely supports the results of experimentation. This result also serves to strengthen the extreme probability that in the human cases of rheumatic pericarditis in which there is little effusion but great thickening of pericardial tissues, the diplococci are shut in the necrotic areas but imperfectly destroyed; and, lurking there, flare up into virulence from time to time, and thus cause the intractable relapsing examples encountered in childhood.

Primary Sarcoma of Prostate in Boy.—The patient in this case was only 3½ years of age. He had had difficulty and pain on passing water for seven weeks, and had very frequently needed a catheter. At operation it was seen that the prostatic urethra was occupied by a tumor the size of a golf ball, which was easily shelled out. The tumor had the structure of a sarcoma. The child recovered from the operation, and was much more comfortable for some weeks, but recurrence was rapid, and death resulted.

Bulletin of Naval Medical Association of Japan, Tokyo

February, 1919, No. 22

*Observations on Babes-Ernst's Bodies and Formation of Spores. J. Ishiguro.—p. 1.
*Causes of Contamination of Air in War Vessels. R. Kimura.—p. 3.
*Lipovaccine. B. Abe.—p. 4.
Secretory Process of Urea and Chlorin Compounds by the Kidneys. G. Ezure.—p. 6.
*Quantity of Cholesterin in Blood. J. Yamakoshi.—p. 7.

Observations on Babes-Ernst's Body and Formation of Spores.—The protoplasm of the seventeen species of micro-organisms used by Ishiguro, with the exception of the tubercle bacillus, was promptly dissolved in concentrated phenol solution, thus leaving the microbic bodies staining faintly, or not at all, and the Babes-Ernst's bodies staining deeply at each pole of the microbe by the usual stains. Ishiguro claims that the intimate relation of this body to the formation of spores cannot be doubted. This body disappeared entirely after coming in contact with the spore corpuscle; but the difference of these two bodies—Babes-Ernst's body and spore corpuscle—could easily be demonstrated by the fact that the former had always some connection with the capsule, while the latter had none. The spore corpuscle, after uniting with the Babes body, underwent several changes, thereby becoming larger in its size, until a complete spore was formed, which first showed some remnants of the mother micro-organism, attached to both poles, to become ultimately free after these melted away.

Causes of Contamination of Air in War Vessels.—Kimura made experiments to determine the degree of contamination of the air caused by vegetables, coals and briquettes kept under conditions likely to exist in storing them in war vessels. Vegetables, such as turnips, onions, potatoes and Japanese onions, were stored separately in glass vessels kept in a cold dark place, and the air in each vessel was examined, after the lapse of a certain time, as to its degree of contamination, with special reference to its proportion of oxygen and carbon dioxid, by various methods, including chemical analysis and animal experiments. From the chemical analysis it was shown that potatoes for 1,000 men a day (488 grams of vegetables is given to one man as ration in the Japanese navy), when kept in a space with the volume of 18 cubic meters (a storage for example, of 3 meters by 3 meters by 2 meters), contaminate the air in that space to such a degree as to increase the proportion of carbon dioxid up to nearly 0.2 per cent., after one day, while this increase was about 1 per cent. in the case of Japanese onions stored under the same condition for the same length of time.

Typhoid Lipovaccine.—Typhoid lipovaccine prepared with unheated sweet oil was used by Abe and his co-workers for their animal experiments, and its value as a vaccine was compared with that of normal typhoid vaccine. They found that the toxin of typhoid bacilli in this lipovaccine was reduced to one fifth of the bacilli in the normal vaccine, and consequently a large dose could be inoculated at one time without any serious reactions. The agglutinin in the serum of rabbits inoculated with this vaccine appeared on the fourth day and reached its maximum value on the fifteenth day on the average. Its first appearance and when it reached its maximum were a little later than in the case when the normal vaccine containing the same dose of bacilli was inoculated at one time, but they appeared much earlier than in the case when the normal vaccine with the same dose of the bacilli was divided into three inoculations with a regular interval. This agglutinating power diminished slowly and became almost stable at the end of a period of about seventy-five days, and continued, after that time, to be almost at the same level for a considerable time. The relative strength of this stable value to the normal agglutinating power was much higher than in the case when the normal vaccine was used. The fluctuation of the value of the bacteriolysin followed almost the same line as the agglutinin, and its existence was much longer than in the case of the normal vaccine. The complement binding substance existed also for a long time. The protecting power of guinea-pigs against infection reached its maximum about ten days later as compared with the normal vaccine, but its standard was higher and maintained for a longer time. From these facts Abe concludes that, by the use of this lipovaccine, a larger dose of typhoid bacilli can be inoculated at one time with slight reactions, the trouble of inoculating repeatedly with the normal vaccine may be removed, and yet the acquisition of high and lasting immunity against typhoid may be attained.

Quantity of Cholesterin in Blood.—The quantity of cholesterin in the blood of ten healthy persons belonging to the laboring class in Japan varied between 130 and 160 mg. in each 100 c.c. of blood plasma, the average being 143 gm. This quantity was generally, though not constantly, lower in the blood of forty invalids suffering from beriberi, and also in cases of anemia and syphilis; while it was higher in three cases of hemiplegia. There was no marked difference in this quantity either before or after a meal.

Lancet, London

April 5, 1919, **2**, No. 4988

Cerebrospinal Fever: Lumleian Lectures. H. Rolleston.—p. 541,
*Causation and Prevention of Industrial Accidents. H. M. Vernon.—p. 549.
*Left Scapular Pain and Tenderness in Heart Disease and Distress. J. Parkinson.—p. 550.
*Autumn Influenza Epidemic (1918) As It Affected New Zealand Expeditionary Force in United Kingdom. J. W. H. Eyre and E. C. Lowe.—p. 553.
*Treatment of Complicated Influenza. A. J. Eagleton and H. H. Butcher.—p. 560.
*Polyorrhomenitis: Malignant Inflammation of Serous Membranes. W. E. Cooke.—p. 562.
Present Epidemic of Influenza. M. J. Rowlands.—p. 563.
Influenza and Diphtheria. E. A. Constable.—p. 563.

Causation and Prevention of Industrial Accidents.—Every year, more than 1,000 workers (exclusive of miners) are killed in industrial accidents in England, from 100,000 to 200,000 suffer injuries sufficient to incapacitate them for a week or more, and about 2,000,000 suffer minor injuries. Vernon examined the accident records in four large ammunition factories over periods of from nine to twenty-five and one-half months, and more than 50,000 accidents were tabulated. Three fourths of the accidents were cuts, chiefly of the hands, against the sharp lathe tools and drills. In the afternoon spell the accidents were 29 per cent. more numerous than in the morning spell, and they were more than twice as numerour in the twelve-hour day period as in the ten-hour-day period. The rise of accidents in the morning is due partly to increasing speed of production. More important than speed of production is the effect of carelessness and inattention. When the average sobriety of the nation greatly increased because of increasing restrictions on the sale of alcoholic liquids, both men and women showed a steady dimunition in accidents. Unsuitable temperature is a very important cause of accidents. In a not very efficiently warmed shell factory the accidents to women were two and one-half times more numerous on such days as the external temperature was at or below the freezing point than when it was 48 F. or over, while at intermediate temperatures the accidents were intermediate in number. The accidents to men were similarly affected, and were twice as numerous on the very cold days as on the warm ones. Only one class of accidents was found to increase much by night, namely, foreign bodies (as metal or emery) in the eye. At the best lit factory they showed very little excess. For the prevention of accidents the author commends the methods employed in the "safety campaign," adopted in the United States. This consists in the installation of safety devices and of as complete a system of mechanical safeguards as possible.

Left Scapular Pain in Heart Disease.—Certain soldiers sent to a heart section complaining of pain below the left breast also spoke of pain in the back. Parkinson and others then began an investigation. In a consecutive series of 100 patients complaining of pain on the left side of the chest, twenty-eight complained also of pain in the left scapular region. The patient complains of pain "in the heart" and "going through to the back," or pain at the heart and "under the shoulder-blade." The scapular pain does not seem to occur in the absence of submammary pain. The pain may be sharp and stabbing, or it may be dull and aching; usually it partakes of the same characters as accompany the submammary pain, although it is rarely so severe. Some patients talk of a stabbing pain going through to the back, and some of an aching pain going round to the back. Exertion is by far the commonest exciting cause. The onset of scapular pain is gradual, and the course chronic. The most constant symptom associated with the thoracic pain is shortness of breath, also dependent on exertion; and it was present in all but two cases. In most it preceded the onset of pain; otherwise it became noticeable about the same time. Other frequent symptoms were palpitation, dizziness, and general weakness.

Of the twenty-eight men who complained of pain in the left scapular region, ten showed hyperalgesia on the posterior surface of the chest, involving in every case the lower part of the scapula, though sometimes extending far beyond it. Chronic pain below the left breast, and pain at or about the lower angle of the left scapula, are seen in valvular disease of the heart, myocardial disease, and in arteriosclerosis and chronic nephritis when the heart has become burdened. It occurs in functional heart disease if that term is used widely to embrace cases with cardiac symptoms and without abnormal physical signs connoting organic disease. Among such include those presenting tachycardia only, and those with added symptoms or signs indicative of functional nervous disorder in association. The history of rheumatic fever was given in twenty out of fifty cases. Of these, ten proved to have signs of valvular disease. Only two men gave a history of syphilis. Two dated their pain from scarlet fever, two from pneumonia, and two from trench fever; none ascribed the onset to pleurisy.

The abnormal signs noted among the fifty cases with scapular pain were as follows: Two had rheumatic valvular disease of the heart—namely, six, aortic incompetence; two, mitral stenosis, and two, mitral incompetence. One patient had breathlessness and pain in the chest and left arm so severe that the diagnosis of myocardial disease was made. Six had a high systolic blood pressure, over 150 mm. of mercury at repeated examinations, and one of these showed enlargement of the heart with a blood pressure of 210; another had very thick and tortuous arteries, and his blood gave a positive Wassermann reaction. In eight cases there was tachycardia, the pulse rate in recumbency being 100 or more at repeated examinations. Four men were nervous in their manner, two of these were tremulous, and a third had a typical hysterical seizure under subsequent observation. One man had persistent slight albuminuria with a normal blood pressure.

Autumn Influenza Epidemic in New Zealand Expeditionary Force.—The total results obtained by Eyre and Lowe in this study favor the use of their mixed catarrhal vaccine. Out of a total average strength of 21,759, approximately 16,104 men received full prophylactic vaccination, and approximately 5,700 were uninoculated or had received only one dose of mixed catarrhal vaccine. Out of a total average strength of 21,759, there occurred 3,366 cases of influenza (15 per cent.). Infection incidence in inoculated and uninoculated men is approximately in the proportion of 1.3 per cent. to 4.1 per cent. (or 1:3). The risk of death in severe and complicated cases in inoculated and uninoculated men is approximately as 8 per cent. to 23 per cent. (or 1:3). The risk of death among all cases infected varies for the inoculated and uninoculated as 0.26 per cent. to 2.2 per cent. (or 1:9).

Treatment of Complicated Influenza.—From a survey of Eagleton and Butcher's results, it appears that although inoculation by a mixed vaccine of *B. influenzae*, pneumococcus, streptococcus, *Staphylococcus aureus*, *M. catarrhalis*, *B. pneumoniae*, and *B. septicus* conferred no immunity to serious complications, yet the course of the disease was modified so that a lower mortality resulted in these severe cases.

Polyorrhomenitis: Malignant Serositis.—Cooke reports the case of a Turkish soldier, aged 29, who complained of malaise, slight cough, and pains in the back and the sides of the chest. He had had no previous illness, and was always able to perform his duties. There was no family history of tuberculosis nor evidence of syphilis. The temperature was 98 F., the respirations 20 with slight dyspnea, and the pulse 88, of good volume and tension. The patient was slightly cyanosed; the venules of the cheeks were prominent; the conjunctivae had a subicteral tinge. There was marked epigastric pulsation. Hypertrophic pulmonary arthropathy was marked in the hands. Diastolic collapse of the cervical veins was not present; there was no paradoxical pulse. Examination of the lungs revealed the chest expansion equal but poor. Litten's sign was absent. Vocal fremitus was very much diminished over both sides of the chest. The percussion note was much impaired; in no region was there absolute flatness. On auscultation the breath sounds were faintly heard over the lower three fourths of the chest. At the apexes in front the breath sounds were more audible. Expiration was prolonged over the whole chest; at the bases there were a few moist râles. Creaks were heard all over the chest. The sputum was scanty and mucopurulent. No tubercle bacilli were found; pneumococci were present in abundance. When the heart was examined the apex impulse could not be seen; there was marked epigastric pulsation; the cervical veins were not prominent. By palpation a diffuse, very faint systolic impulse could be detected in the fourth and fifth interspaces, inside the nipple line. Percussion disclosed an area of dulness from 2 inches on the right of the sternum to 4 inches on the left, at the level of the fourth interspace. The dulness extended upward to the sternal notch, and laterally blended with impaired resonance over the lungs. On auscultation, the heart sounds were faintly heard at the apex. The pulmonic second sound was very loud compared with the aortic. There were crackling râles over the whole of the sternum and the adjacent chest wall. The liver extended an inch below the costal margin; there was no ascites. The specific gravity of the urine was 1,018; there was no albumin nor sugar. The patient died with all the signs of edema of the lungs. A full necropsy report is given.

Practitioner, London

April, 1919, **102**, No. 4

Clinical Study of One Hundred and Eight Cases of Ectopic Pregnancy. J. B. Hellier.—p. 169.
*Diagnosis Between Organic and Functional Anesthesia. R. T. Williamson.—p. 177.
Cases of Spontaneous Pneumothorax. E. P. Weber.—p. 190.
*Diagnosis of Myocardial Debility. R. T. Thorne.—p. 199.
*Effects of Moderate Exercise on Blood Pressure. G. Smythe.—p. 205.
Retrospect of Otology, 1918. M. Yearsley.—p. 215.
*Treatment of Asthma. R. Stewart.—p. 218.
Anxiety State—Aspect of Treatment. L. Scott.—p. 222.

Diagnosis Between Organic and Functional Anesthesia.—Williamson points out that the greatest difficulty in diagnosis between organic and functional anesthesia occurs when only part of one or two limbs is anesthetic, as the hand and a portion of the arm, or the foot and a portion of the leg, the upper limit of anesthesia forming a line more or less at right angles to the long axis of the limb. This anesthesia may be functional or may be due to an organic cerebral lesion or multiple peripheral neuritis, but only in very rare instances to an organic spinal lesion (as syringomyelia or hemorrhage). If the upper limit of the anesthesia is very sharply defined, this is a point in favor of functional anesthesia. Often diagnosis is definitely decided by Janet's test, or by the vibrating sensation, or by other characters.

Diagnosis of Myocardial Debility by Means of Differential Stethoscope.—It is maintained by those who have used this instrument that it enables the physician to diagnoses myocardial changes. Thorne believes this to be the case, and offers confirmatory evidence in support of this statement. He has found the instrument of great value in judging the effect of acute febrile conditions, such as influenza, pneumonia, measles, acute rheumatism, pleurisy, bronchitis, and other illnesses, on the myocardium. The results obtained enable the progress of the disease in the acute stage and during convalescence to be estimated, and the patient to be kept in bed as long as there is any evidence of myocardial weakness. He has also found the differential stethoscope of great value in detecting malingerers who plead heart weakness, palpitation and breathlessness, when they do not wish to return to duty. Experience leads Thorne to believe that it can be relied on in the diagnosis of such cases.

Effects of Moderate Exercise on Blood Pressure.—One hundred officers cadets were used by Smythe to get these data. He found that in the majority of cases, the systolic blood pressure is lowered after moderate exercise. This lowering is caused mainly by the dilatation of the arteries and capillaries, and not by fatigue of the heart muscle. The average pulse rate in the series was 78 per minute, both before and after exercise. The effects of moderate exercise on the system are beneficial, as the peripheral dilatation caused thereby increases the warmth of the skin, and provokes the flow of sweat from the sweat glands without taxing the heart to any degree. After physical training on Swedish lines, the man finishes up unexhausted and fresh.

Treatment of Asthma.—Besides advising fresh air and proper diet and hygiene, Stewart gives iodids and arsenic with strychnin for one month after the attack has subsided.

Archives des Maladies du Cœur, etc., Paris

January, 1919, **12**, No. 1

Mechanism of the Muscular Contractions of the Ventricular Systole. G. Etienne and J. Mondlange.—p. 1.
The Circulation in the Retina. P. Bailliart.—p. 21.
Functional Tests with Tachycardia. M. Leconte.—p. 32.

Archives de Médecine des Enfants, Paris

March, 1919, **22**, No. 3

*Paralysis of the Neck. F. Figueira.—p. 113.
*Cerebrospinal Fragility. A. Collin and Verdé.—p. 126.
*Latent Purulent Pleurisy in Young Children. P. Bézy and F. Escande.—p. 137.
*Neuroblastoma Sympathicum. J. Comby.—p. 142.

Paralysis of the Neck.—Figueira here presents six cases of the "cephaloplegic syndrome" which affects infants and young children, mostly previously healthy. On waking in the morning it is found that the head cannot be held up; it lops forward or backward. In some of the cases there had been a preceding pseudogrippal catarrhal affection. The tendon reflexes were usually attenuated, and in most of the cases the electric excitability was reduced. This acute and sudden akinesia disappeared in four to ten days, without leaving a trace. All the cases were observed at Rio de Janeiro, and the first coincided with an epidemic of 100 cases of poliomyelitis (1910-1911). Since that time, about ten or fifteen cases of poliomyelitis have been reported there each year. Figueira is inclined to regard the "cephaloplegic syndrome" as an abortive form of poliomyelitis, notwithstanding the lack of an epidemic and the absence of several symptoms usually regarded as testifying to poliomyelitis.

Vulnerable Nervous System in Children.—Collin and Verdé expatiate on the peculiar fragility of the cerebrospinal nervous system in some children, which renders it exceptionally susceptible to toxic and infectious influences. They review in detail the whole train of nervous phenomena which can be attributed to this. A long walk or muscular fatigue, long studying, may transiently modify the reflexes and sensibility. Sleep may be irregular or excessive, and the susceptibility to intoxications and infections is extreme. In young infants, spasmophilia, periods of agitation, and bradycardia when they are hungry are evidently due to the substandard state of their nervous system. Sometimes the differing electric responses on the two sides enable this special fragility on one side to be studied most instructively, as Moll has described in his work on the difference between the left and the right sides. He declared that the weaker side is more susceptible to morbid processes.

Purulent Pleurisy in Young Children.—Bézy and Escande explain the blunder in diagnosis in the two cases described as due to the remarkable tolerance of the pleura and lung for several months to the presence of and the pressure from the pus. The negative results of puncture must have been due to the thick consistency of the pus or to obstruction of the needle. The misleading resonance in the space of Traube was explained by radioscopy showing an unusually large air bubble in the stomach. Deviation of the heart and mediastinum is the most instructive finding. The boy of 3 was given operative treatment for a supposed osteitic process in the ribs. Radiography may be the only means to detect these latent pleurisies.

Neuroblastoma.—Comby summarizes recent literature on neuroblastoma sympathicum, and remarks that probably certain cases described as sarcomas of the suprarenals were in reality such neuroblastomas originating in the sympathetic nerve.

Bulletin de l'Académie de Médecine, Paris

March 4, 1919, **81**, No. 9

Advantages of Intrascleral Cartilage Graft After Enucleation of Eyeball. Duverger and F. de Lapersonne.—p. 237.
*Hot Air in Treatment of War Wounds. M. Vignat and Bazy.—p. 239.
*The Demineralization of Bone. A. Robin.—p. 241.
Brazilian Trypanosomiasis: Chagas' Disease. E. Brumpt.—p. 251.
The Problem of Chemotherapy of Tuberculosis. L. Rénon.—p. 254.
Methylene Blue in Influenza. Blum.—p. 256.

Hot Air in Treatment of Wounds.—Vignat uses a jet of hot air or hot oxygen in treatment of wounds, and extols the fine results realized. It proved particularly useful in recent wounds, after clearing out the devitalized tissue, to ward off infection.

Demineralization of Bone.—Robin declares that all empiric measures have failed to arrest the demineralization of bone which has proved a serious complication with many war wounds, as well as in osteomalacia, etc. He outlines a course of treatment which has proved successful in his hands, as he describes in detail. The food must be selected to supply mineral salts, the generation of acids must be prevented, the nervous system stimulated, and cod liver oil and arsenical preparations given, with extra care for hygiene. The examples he gives show that this tendency to demineralization is not beyond our therapeutic resources guided by the metabolic findings.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 24, 1919, **43**, No. 3

*Streptococcus Septicemia. F. Rathery and J. du Castel.—p. 27.
Functional Tests of Heart in Secondary Syphilis. J. du Castel.—p. 31.
*Curable Cirrhosis of the Liver. Courtois-Suffit and R. Giroux.—p. 35.
Congenital Stenosis of Left Subclavian Artery. C. Laubry and C. Esmein.—p. 40.
*Meningococcus Septicemia. G. Faroy and E. May.—p. 44.
*Spirochetes in the Urine in Syphilis. P. P. Lévy and Guilé.—p. 48.

Streptococcus Septicemia.—Rathery and Castel report two rapidly fatal cases in healthy young soldiers. The onset suggested influenza in one case; in the other there was a typhoidal condition with generalized contracture, a papulohemorrhagic eruption with phlyctenas, and fulminating bronchopneumonia with rapid purulent breaking down of lung tissue.

Cirrhosis of Liver with Ascites, Peritonitis, and Recovery.—Courtois-Suffit emphasizes anew that a possible syphilitic origin should be suspected, until disproved, in every case of cirrhosis of the liver, even with ascites and even when there is alcoholism besides. Four typical cases are reported in which vigorous treatment based on the positive Wassermann reaction has apparently cured the patients. Even with a negative Wassermann, this treatment should be given a trial; the patient can only gain thereby. The improvement may be extremely slow and gradual; several months should be allowed to elapse before deciding that it is not effectual. In three other cases the debility was so extreme that the patients died before the specific treatment had modified the clinical picture.

Meningococcus Septicemia.—Faroy and May say that there was no meningitis and only arthritis with the meningococcus septicemia. Both the men recovered under intravenous antimeningococcus serotherapy. Injection of the antiserum into the joint did not seem to benefit, but the arthritis yielded promptly to an injection of ether. The septicemia had induced a typhoidal continuous fever.

Spirochetes in the Urine.—Lévy and Guilé examined the urine of twenty-four men shortly before or after the beginning of the secondary stage of syphilis. The pale spirochete was found in the urine in only one of the men, and this only at the end of the first month after the development of the chancre.

Lyon Médical

March, 1919, **128**, No. 3

*Treatment of War Aphonia. J. Garel.—p. 129.
Polyvalent Serotherapy in Influenza. R. Pauly.—p. 170.

War Aphonia.—Before the war, Garel had scarcely ever encountered aphonia in men, although it has always been comparatively common in women. The emotional stress of warfare caused the development of aphonia in many of the men on active service. He has had 196 cases, and thirty-eight of the men had had the aphonia from six months to three years. A complete cure was realized in 124 of the 172 given treatment, the proportion of cures growing larger each year with his increasing confidence in treatment addressed to the causal hysteria (pithiatism). An important aid in this is to segregate the cases of aphonia, and to have cured cases among them. The unconscious suggestion from these cured cases is an invaluable factor in the cure. One of the men had recurring spasm of the glottis compelling intubation ten times in the course of seventeen days, but he was readily cured when he was witness of the cure of others. Garel declares that every case of symmetrical paretic aphonia will subside in time. Reeducation is the best method of treatment of aphonia in man or woman. He has the patient make a forcible expiration, like a sigh, repeating this and finally getting the patient to make this expiration audible with a sound in a low tone. This sound can be elicited by a sudden pressure on the epigastrium with one hand, the other hand on the back. With this simple maneuver, the expiration is accompanied by a sound, and the patient is urged to reenforce this sound voluntarily, to utter the vowels during a series of brusque expirations. In less than two minutes, by this means he cured aphonia in one case of nine years' standing. The laryngoscope will reveal paralysis of the vocal cords, and in eleven cases the mere introduction of the laryngoscope alone cured the aphonia. In others, backward pressure on the sides of the thyroid cartilage, the head lowered, as an effort is made to speak, answered the purpose. He never obtained any benefit from hypnosis.

Paris Médical

March 8, 1919, **9**, No. 10

*Malarial Meningitis. G. Paisseau and J. Hutinel.—p. 197.
*Vaccine as Adjuvant in Gonorrhea. Baril and P. Creuzé.—p. 202.
Pseudo-Mumps. Denéchau.—p. 208.
*The Therapeutic Value of the Oculocardiac Reflex. R. Voisin and Benhamou.—p. 210.

Malarial Meningitis.—Paisseau and Hutinel give examples of reactions on the part of the meninges in the course of malaria, merely cytologic or more pronounced, sometimes intermittent, up to actual acute meningitis. When energetic treatment is instituted the acute meningitis subsides but it may leave tardy sequelae, such as the ulceration of the cornea in a case described in detail. They comment on the analogy between malaria and syphilis as displayed anew by the meningeal reactions which each may present. They warn also that the peripheral blood may be free from parasites during these pernicious phases of malarial infection. The pernicious character is not necessarily due to particularly intense infection but merely to the localization of the parasites in some special organ. Considerable bibliography is appended.

Vaccine Therapy in Gonorrhea.—Baril and Creuzé obtained the cure in from twelve to twenty-five days in 95 per cent. of 300 cases of acute or chronic gonorrhea, including fifty cases in women. They ascribe this success and the shortening of the course of the disease to the combination of a polyvalent vaccine with local treatment of the urethritis or vaginitis, plus systematic dilatation of the urethra in the old cases. The vaccine was injected on alternate days, in the gluteal muscles, to a total of eight injections. The lavages are not begun until about the fourth injection of the vaccine, when the general defensive reaction is at a certain height. They prefer mercury oxycyanid to permanganate for the local treatment, using a 1:8,000 up to a 1:4,000 solution.

Therapeutic Application of the Oculocardiac Reflex.—Voisin and Benhamou were surprised to find in two cases of essential paroxysmal tachycardia, without heart disease, that under pressure on the eyeball the tachycardia subsided. These patients were a woman of 40 and a young man; in the latter the pressure had to be kept up for two or three minutes to ensure a permanent result. In other cases the tachycardia was constant, and pressure on the eyeball modified it for two or three hours, the subject feeling the marked modification of the heart beat and in this way being favorably impressed and stabilized. In neuroses, this is an important adjuvant, as also in certain manifestations of hysteria, epileptiform seizures, tremor, etc.

Presse Médicale, Paris

March 6, 1919, **27**, No. 13

The Bacteriologic Diagnosis of Diphtheria. S. Costa, J. Troisier and J. Dauvergne.—p. 113.
Technic for Laminectomy for War Wounds. R. Dumas and L. Maurizot.—p. 114.
Progressive Ossifying Myositis. J. Luzoir.—p. 115.

March 10, 1919, **27**, No. 14

Gilbert's Pityriasis is a Tuberculid. P. Le Damany.—p. 121.
Traumatic Aerocele of the Brain. R. Glénard and J. Aimard.—p. 123.
*Bronchopulmonary Spirochetosis. R. Dalimier.—p. 124.
Four Useful Surgical Instruments. F. Jayle.—p. 125.
Hexamethylenamin by the Vein in Influenza. H. Michel.—p. 126.

Bronchopulmonary Spirochetosis.—Dalimier remarks that men with Castellani's spirochetosis present the clinical picture of pulmonary tuberculosis, but the lung findings and sputum are almost negative and there is no fever, although the men are constantly spitting blood. The spirochete in question is of all lengths and sizes, and with from one to ten twists. In two of his cases this spirochetosis had kept up for more than a year. The hemoptysis although frequent was never severe, and no complications were observed, but the debility in the chronic cases may invite other infections, especially tuberculosis. This spirochetosis is contagious but not violently so. None of the usual measures for hemoptysis did any good. The best results were obtained with a daily dose of 60 gm. of wine of cinchona with 10 drops of Fowler's solution. This seemed to have a distinct action on the expectoration of blood.

Revue Mens. de Gynécologie, d'Obst. et de Péd., Paris

January, 1919, **14**, No. 1

*Cystoscopy with Uterine Cancer. P. Cruet.—p. 3.
Case of Tardy Rotation of the Head. S. Rémy.—p. 24.
Pituitary in Obstetrics and Gynecology. L. Pouliot.—p. 27. Cont'n.

The "Revue."—This review suspended publication during the war, but now resumes its monthly issue, the fourteenth year since its foundation. Cruet's article opens the list, the last from his pen, as he was one of the victims of the war. The three leading articles are accompanied by summaries in English and in Spanish.

Cystoscopy in the Diagnosis of Cancer of Uterine Cervix.—Cruet analyzes what has been written on this subject in different countries, saying that there are now 500 cases in which the cystoscopic findings have been recorded with cancer of the cervix. His own experience with ten operable and seventeen inoperable cases confirms the general opinion that simple bulging of the floor of the bladder has no diagnostic significance. When the floor is thrown up into folds, with deep valleys between, we can count on there being tight inflammatory adhesions which will hamper the operation on the cancer, but do not contraindicate it absolutely. When there is edema of any kind, there are usually extremely close adhesions, possibly of a malignant nature, which render the operation dangerous and, he thinks, stamp the case as inoperable. The majority of writers report that they never had any difficulty in operating when the cystoscopic findings were negative, but invariably, when they were positive. However, there is no agreement between them as to what constitutes positive findings.

Cruet regards the aspect of the mouth of the ureter as suggestive when it is pushed up or to one side by the bulging of the bladder floor. The ureter mouths may be surrounded by abnormal vascularization, diffusely red, with edema, but the most characteristic findings are (1) the enlargement and flattening out of the orifice, suggesting stenosis just above, and (2) the edematous protrusion of the ureter mouth. This protrusion may give it a volcano-like aspect. When the ureter is compressed, the interval between the spurts of urine is longer and the jet stronger. In normal conditions the intervals are of equal length with both ureters. Compression is also liable to induce spasm of the mouth of the ureter, fractioning the ejaculation.

Cruet also noticed that when the ureter had been invaded there were no folds in the bladder mucosa around the ureter mouth after ejaculation. Catheterization of the ureter may also give useful information, and it may aid in the operation to leave the catheter in place. Four plates that should have accompanied this article, are to follow later.

Deutsche medizinische Wochenschrift, Berlin

Jan. 2, 1919, **45**, No. 1

*Research on Regeneration in Man. A. Bier.—p. 4.
*Cure of Psychogenous Deafness. R. Sommer.—p. 10.
Organized Prophylaxis of Epidemics. P. Schmidt.—p. 11.
*The Campaign Against Venereal Diseases. A. Blaschko.—p. 12.
*Serodiagnosis of Typhus. L. Dienes.—p. 14.
Nephritis with Influenza. J. Heising.—p. 15.
Manifestations of Influenza in Ear and Upper Air Passages. C. Hirsch.—p. 15.
Thrombosis and Eruption in Influenza. J. Jacob.—p. 16.
Danger of Typhus from the East. E. Martini.—p. 17.
*Remote Sounds from Heart and Vessels. P. Hampeln.—p. 19.
Hemostasis by Direct Pressure on Artery. H. Walther.—p. 20.
*Occult Blood in the Feces. R. Baumstark.—p. 21.

Regeneration of Human Tissues.—In this eighteenth report on the results of his research on regeneration in man, Bier discusses the interstices of loose connective tissue, regarding them as analogous with the synovial spaces.

Psychogenous Deafness and Deafmutism.—Sommer sets the patient to examining the record of his tremor on a registering drum. When absorbed in this, a loud gong is struck just behind him. The register shows the effect of the shock, and it is easy then to convince him that he has "regained" his hearing.

Campaign Against Venereal Disease.—Blaschko asserts that the public must be educated to realize that venereal disease can be effectually aborted if treated at once after infection. All physicians must be trained to recognize venereal disease at once. When these two conditions are realized, then prompt application for treatment and the immediate recognition of the disease and giving of proper treatment will prove a great advance in the prophylaxis of venereal disease.

Typhus.—Dienes argues to explain why the serum of typhus patients agglutinates certain strains of the proteus.

Sounds from Heart and Vessels Heard at a Distance.—Hampeln discusses the sounds heard at a distance, saying that the first heart sound can be heard at remote points in both physiologic and pathologic conditions, as also the second heart sound. Sometimes a sound can be heard in a peripheral region, as for instance, a volar sound in the palm.

Occult Blood in Stools.—Baumstark has been carrying on a lively controversy with Boas and others in regard to occult blood in the stools, as his experience with 254 cases of stomach or bowel disease showed often positive findings in the complete absence of ulcer or cancer. He reiterates that occult blood in the stools should not be regarded as of decisive differential diagnostic importance in dubious cases.

Chirurgia degli Organi di Movimento, Bologna

February, 1919, **3**, No. 1

*Fracture of the Clavicle. A. Catterina.—p. 1.
*Purulent Arthritis of Tarsus. O. Uffreduzzi and G. Serafini.—p. 20.
*War Fracture of Femur or Humerus. U. Camera.—p. 29.
*Operative Treatment of Causalgia. G. D'Agata.—p. 55.
Bacterial Flora in Amputation Stumps. G. Vernoni.—p. 71.
*Amputation Stumps. A. Chiasserini.—p. 97.
*Partial Amputation of the Hand. F. Delitala.—p. 115.
*Attachment for Artificial Working Hands. V. Putti.—p. 122.

Fracture of the Clavicle.—Catterina reviews the various methods in vogue for treating war and peace fractures of the clavicle, and describes his experiences with seven different technics applied on the cadaver. He also describes the findings with radiologic control on the living, and the ultimate outcome. With a subcutaneous fracture of the clavicle, no apparatus will guarantee perfect coaptation of the fragments, and hence he advocates surgical treatment as the only means to reduce the fragments and ensure their perfect contention. If this is not deemed advisable, the arm should be immobilized in abduction or inward rotation.

Purulent Arthritis of the Tarsus.—Uffreduzzi and Serafini commend Obalinski's method for resection of the tarsus with rebellious suppurating wounds of the foot.

Orthopedic Treatment of Fractured Femur and Humerus.—Camera gives illustrations of some simple devices to facilitate orthopedic treatment of firearm wounds with fracture of the femur or humerus.

Operative Treatment of Causalgia.—In D'Agata's case there was paralysis of the nerves forming the brachial plexus, in addition to the causalgia—all the result of a war wound. The nerves were found embedded in a mass of cicatricial tissue which was excised, releasing the nerves. The pains subsided at once but soon returned, although there was progressive improvement in other symptoms. As the causalgia persisted unbearable, two months later he resected the nerve sheath enveloping the brachial artery, freeing it by this periarterial sympathectomy for a stretch of 12 cm. This cured the pains, and the motor disturbances have gradually retrogressed. Before the operations the condition had been growing slowly but steadily worse. The neurolysis affected favorably the neuritic pains, but the periarterial sympathectomy put an end to the vasomotor, trophic and secretory disturbances.

Secondary Treatment of War Stumps.—Chiasserini pleads for amputations by technics that will ensure better against conical stumps. The best way to manage these stumps after protracted suppuration seems to be with an osteoplastic reamputation after the local inflammatory process has subsided or become much attenuated. It may even be possible to loosen up the tissues around enough for a plastic operation without cutting the bone further, as he shows with a few illustrations of some cases.

Partial Amputation of the Hand.—Delitala discusses this subject from the standpoint of the prosthesis. In some of the devices illustrated the fingers of the prosthesis are immovably curved but the thumb is movable, or vice versa, and is controlled by the movements of the stump of the hand inside the prosthesis. This is possible even with amputation close to the carpus.

Attachments for Working Hands.—Putti's illustrations show the simple harness which fastens the working prosthesis to the stump and body, thus reenforcing the stump with the strength of the body. One illustration shows the whole body suspended from the working claw hand hooked over a branch. Another shows a tug-of-war between two men whose claw hands are hooked together.

Gazzetta degli Ospedali e delle Cliniche, Milan

Feb. 20, 1919, **40**, No. 15

Epidemic Influenza and Three-Day Fever in Catania in 1918. G. de G. Giunta.—p. 113.

Feb. 23, 1919, **40**, No. 16

*Summer Raynaud's Disease. N. Samaja.—p. 123.

Feb. 27, 1919, **40**, No. 17

War Mutism and Its Treatment. F. Brunetti and L. Giaculli.—p. 129.

Summer Raynaud's Disease.—In Castellino's 1895 compilation of 316 cases of Raynaud's disease, syphilis was incriminated as responsible for the affection in 22 cases; malaria in 19; alcoholism and arteriosclerosis in 16; diabetes in 23; tuberculosis in 14; pernicious anemia in 9; leukemia, nephritis and heart disease in from 8 to 12 each; typhoid, pneumonia and rheumatism in less than 5, and a neurosis in 171 cases. But in all of them the action of cold was the provocative factor. The cold need not be severe, even the change from a warm bed, getting up in a cool room, may be enough to bring on the disturbances. He reviews what has been written on the subject, and then describes a case that differs from all others in that the disturbances came on for the first time in August. The attacks of pain, numbness and cyanosis in feet and hands then returned regularly every morning and lasted from 8 till 10. The young man was of a frail constitution and had been sent to the hospital for disordered heart action but no organic defect could be found except that the spleen was enlarged. The attacks recurred every morning but subsided completely in November under vigorous quinin treatment. The blood was not examined for hematozoa but the response to quinin confirmed the assumption of a malarial origin as the young soldier had been serving in a malarial region.

Pediatria, Naples

March, 1919, **27**, No. 3

*Calcium by the Vein in Spasmophilia. S. Maggiore.—p. 129.
*The Urochromogen Reaction in Children. U. Provinciali.—p. 139.
*Autograft in the Radius. N. Caprioli.—p. 151.
*Pituitary Insufficiency from Adenoids. P. Caliceti.—p. 161.

Calcium by the Vein in Spasmophilia.—Maggiore injected calcium intravenously in eight children with tetany, mostly with rachitis. The youngest was 20 months, the oldest 10 years old, and electric tests were applied just before and at one, two, three, four, twelve, forty-eight and seventy-two hours thereafter. The dose was 1, 2, 3 or 5 cg. of calcium chlorid with enough of the vehicle to make 5 c.c. Each child was treated twice. No inconveniences were observed from the intravenous administration, while the drug promptly reduced the galvanic excitability of the nerves. This effect was most pronounced by the third hour and began to decline by the twelfth. The responses to the electric tests became approximately normal, and this effect was equally apparent with the second application of the drug.

The Urochromogen Reaction in Children.—Provinciali was unable to obtain any characteristic findings with Weiss' urochromogen reaction in tuberculosis, typhoid or paratyphoid. A positive response is obtained in almost all prolonged febrile conditions.

Autograft for the Radius.—Caprioli remarks that autografts come under the head of physiology rather than of surgery, and that they deserve a wider application. In a case described, a healthy boy of 10 developed a psudarthrosis after a fracture of the forearm which had suppurated for two months. The bone had become demineralized and had shrunken in size. He gives an illustrated description of the implanting of a graft taken from the tibia, the whole done at one sitting. The success was complete. This case confirms the advantages of cutting the grafts without preventive hemostasis. When implanting it, however, the blood should be entirely expelled from the region. The graft was kept in sterile gauze while the bed was being prepared for it.

Pituitary Disturbance from Adenoids.—Caliceti refers to the way in which the pituitary may be damaged by adenoids. The resulting set of symptoms was described by Citelli, and Caliceti here reports two new cases and reaffirms the immense importance of prophylaxis, removing adenoids before they have time to injure the pituitary and entail, secondarily, disturbances in development both of body and mind. The body assumes a feminine aspect and there is more or less tendency to feeblemindedness. This can be arrested in some cases by pituitary treatment, but removal of the adenoids is indispensable also. Even adults with this "Citelli syndrome" are often rendered brighter, more alert and dependable by pituitary treatment, as in the case of a soldier here described.

Policlinico, Rome

March 2, 1919, **26**. No. 9

Etiology of Influenza. F. Micheli and G. Satta.—p. 257. Conc'n.
Physiopathology of Aviators. L. Manginelli.—p. 261.
*Prophylaxis of Influenza. V. E. Ovazza.—p. 271.
*Treatment of Influenza. S. Avagnina.—p. 272.
Opium Preparations in Cardiovascular Disease. G. Sabatini.—p. 275.

Influenza.—Ovazza records that although a number of persons contracted the influenza anew on its return in the fall, after having had it in the spring, yet the return cases were strikingly mild and always free from complications. This sustains the conception of a relative immunization, at least. He comments on the important change which seems to have been realized, almost simultaneously, in the hospitals thoroughout the world, namely, the refusal to admit visitors. The experiences in the pandemic seem also to have removed the lay dread of "going to the hospital" as practically equivalent to going to one's death. It is our task now to foster the idea that the hospital offers numerous advantages over the care in the home, and that the sick should discourage the visits of friends as liable to inflict complications on the sick while spreading disease outside. He denounces further the closing of schools unless the children are kept strictly in the house. Otherwise the children meet in the streets, and some children do not get any cleaning up except for school. There is no sense in closing the schools unless at the same time all public meeting places, street cars, etc., are abandoned likewise.

Treatment of Influenza.—Avagnina found bradycardia comparatively common in his over 2,000 cases of influenza, and it was constant in all those with bronchopneumonia. This confirms the assumption that influenza causes a vagotonic tendency, and it emphasizes further the inadvisability of giving digitalis in bronchopneumonia of influenzal origin.

Riforma Medica, Naples

March 1, 1919, **35**, No. 9

*Primary Afebrile Malaria. E. Mondolfo.—p. 165.
Brain Wounds: Two Cases. U. Saraval.—p. 168.
Treatment of War Psychoneuroses. G. Pellacani.—p. 170.
Phenol in Treatment of Influenza. S. Orlando.—p. 173.
Examination of Balancing Function. A. Azzi.—p. 177.

Afebrile Primary Malaria.—Mondolfo reports the case of a corporal of 43 who presented symptoms of grave anemia and the parasites of malignant tertian were found in the blood, but nothing was known of any febrile attacks. He had been under treatment for supposed nephritis until the blood findings cleared up the diagnosis; under quinin, recovery was soon complete.

Rivista Critica di Clinica Medica, Florence

Feb. 1, 1919, **20**, No. 5

A Field Hospital in the Upper Alps. L. Castaldi.—p. 49.

Brazil Medico, Rio de Janeiro

Feb. 1, 1919, **33**, No. 5

*Leprosy at Rio de Janeiro. F. Terra.—p. 33. Concluded in No. 6, —p. 41.
Aerophagia. J. Cardoso.—p. 36.

Leprosy at Rio de Janeiro.—Terra quotes early authorities who commented on the fine, healthy appearance of the natives of Brazil when Europeans first appeared there. Nothing like leprosy seems to have been ever noted among them. It is scarcely likely that the negroes brought from Africa in such numbers imported the disease, as the slave dealers were careful to bring only selected specimens. Some years as many as 60,000 Africans were sold into slavery in Brazil, but in 1850 this practice was repressed by legislation. The Portuguese who colonized the country seem to have imported leprosy. It was first noted about 1600. In 1766 a total of 300 cases were known at Rio, with a population of 60,000. There has been no census of lepers taken at any time, but Terra concludes from his personal investigations and the hospital records that there are now about 450 or 500 cases—350 lepers are officially known. This for a population of 1 million shows that leprosy has not increased proportionately to the increase in the population. He urges the founding of a leper farm colony.

Cronica Medica, Lima

January, 1919, **36**, No. 667

*Operative Treatment of Chronic Constipation. B. H. Zapata.—p. 1.
The Public Hospital System of Lima. C. A. Bambarén.—p. 21.

Operative Treatment of Chronic Constipation.—Zapata relates the details of eight cases to emphasize the importance of operative treatment in certain cases of chronic constipation in which nothing but removal of adhesions, binding the bowel at some point, could possibly have given relief. He warns that constipation of a merely medical character may induce the formation of adhesions around some point where there is retention of feces. Prevention of adhesions and kinks depends also on prophylaxis of inflammatory processes in the peritoneum. Each case requires individual treatment, and the eight described show the wide range of indications to correct kinks, membrane formation, ptosis, or other anomaly responsible for the intractable constipation.

Gaceta Medica de Caracas

Feb. 15, 1919, **26**, No. 3

*Emetin with Amebic Liver Abscess. E. P. de Bellard.—p. 25.
*Balantidium Dysentery. E. P. de Bellard.—p. 27.

Amebic Liver Abscess.—The abscess in the first of de Bellard's two cases had developed insidiously, ten months after a mild and brief attack of dysentery. The symptoms were almost exclusively from the lung forced up by the tumor in the liver. The case had been mistakenly labeled "advanced pulmonary tuberculosis plus malarial hepatitis." The large abscess in the other case had been ascribed merely to simple hepatitis. The right lobe of the liver was involved in both, and after aspiration of the contents of the abscess, emetin was injected into the cavity: 0.15 gm. of emetin in 30 c.c. of distilled water. Recovery was prompt and complete. The pus aspirated totaled 2,850 c.c. in one case and 1,900 c.c. in the other in which two abscesses were found. The operation had been preceded by subcutaneous injection of 0.04 gm. emetin, morning and evening, for three or four days.

Balantidium Dysentery.—De Bellard reports another case of balantidium dysentery, the twenty-eighth published in Venezuela and the fourth he has encountered himself. In the 154 cases on record the mortality was 23 per cent. In his four cases the domestic animals shared the family dwelling place. In his latest case the man of 50 had been ailing for two years with a debilitating diarrhea and severe abdominal pains, vertigo and headache, and discomfort in the colon region. The colon was flushed twice a day with 1 l. of a 1 per thousand solution of quinin sulphate, and 3 drops of an iodin-iodid solution (Lugol's solution) were taken internally three times a day. Improvement followed at once, and in a week the stools were free from the balantidium with which they had swarmed before.

Observaciones y Notas, San Cristóbal, Venezuela

January, 1919, 1, No. 10

*Emetin by the Vein. C. J. Bello.—p. 190.
*Pseudo-Adnexitis of Hysteric Origin. H. Sanchez B. and C. J. Bello.—p. 202.

February, 1919, 1, No. 11

Infection with Enlarged Prostate. H. Sanchez B.—p. 210.
Horse Serum as Hemostatic. H. Sanchez B. and C. J. Bello.—p. 213.
*Abscess in the Liver. C. J. Bello and H. Sanchez B.—p. 217.

Emetin by the Vein.—Bello tabulates a number of cases in which emetin has been administered intravenously by different clinicians in various countries in treatment of amebic dysentery. He also gives the details of eleven cases from his own practice. All this testimony shows apparent tolerance for the doses employed. The only deaths were in the cases in which the ameba was not responsible for the dysentery, and the disease continued its fatal course. One boy of 12 with dysentery for two months was given 0.21 gm. of emetin by the vein in five days, the first dose 0.07 gm. The cure was complete and permanent, and the drug caused absolutely no disturbances. The tolerance was complete in all his cases even when up to 0.28 gm. was given in five days. The cases with other intestinal parasites were the most refractory.

Pseudo-Ovaritis in the Hysteric.—Sanchez and Bello report two cases in which at the laparotomy—on the presumptive diagnosis of ovaritis or salpingitis—the adnexa were found intact in one and with an insignificant cyst in the other case. Both women were permanently cured, over one year to date, by the laparotomies.

Liver Abscesses.—Bello and Sanchez remark that tropical liver abscess has become a much less serious affection since emetin treatment has been introduced. It may cure alone, but in cases of long standing, it should be supplemented with operative treatment. The latter is much less serious when reenforced with emetin than it used to be, as they show by six clinical cases reported.

Plus Ultra, Madrid

October, 1918, 1, No. 4

The True Mechanism of Skiascopy. I. M. Marquez.—p. 175.
Recent Progress in our Knowledge of Heart Disease. A. Mut.—p. 183.
*Treatment of Malaria by Special Technic. J. M. Casares y Bescanza.—p. 186.
Recent Progress in Therapeutics and Pharmacology. J. Sanchis Banús.—p. 188.
Anatomy of the Bile Ducts. P. Belou.—p. 191.
Recent Progress in Medicine. Camacho Alejandre.—p. 197.
Factitious Industrial Accidents. A. Oller.—p. 199.
Recent Progress in Bacteriology. L. Lamas Ojea.—p. 204.
Gastric Syphilis. Iñigo.—p. 208.
Recent Progress in Ophthalmology. T. Barraquer.—p. 212.
Bacteriology of Influenzal Bronchopneumonia. J. A. Palanca.—p. 214.
The Prevailing Epidemic at Sevilla. A. Salvat.—p. 219.
Rapid Demonstration of Pale Spirochetes by Modified Zettnow Technic. N. Calvin.—p. 228.
Recent Progress in Surgery. A. Perera.—p. 232.

The "Plus Ultra."—This recently founded medical monthly is unique in several respects: its large size, 11 by 15 inches, its large plates in color photography, its numerous collective or synthetic reviews on different branches of medicine and surgery, and its high price, 70 pesetas a year, about $14. The paper and illustrations are of the best, and the name "Plus Ultra"—not "Non"—means "More Beyond." It aims for world-wide collaboration in the five principal languages. "Plus Ultra" is the proud motto of Spain. She dropped the "Non" when she added the Western Continent to the world.

Technic for Administration of Quinin in Malaria.—Casares treats malaria on what he says is a new principle, and states that 897 of his 1,072 malaria patients were cured by a single course of four doses; 129 required a second course and forty-six a third. The complete cure a year later was verified in [illegible] cases. The reason why more than one course was required in some cases was because the quinin was not given at the right time, or the patient had vomited the drug, or had neglected to take the whole of the four doses ordered. He noticed that when the chill comes on, the malarial subject feels extremely thirsty and drinks copiously or can be persuaded to drink large amounts of water without distaste. Examining the stomach shows that there is no protrusion, the water being evidently absorbed at once. Absorption in the stomach proceeds more rapidly when the water contains certain salts, especially chlorids. When the chill begins, the skin looks pale and there is more or less "goose flesh"; the blood is driven inward from the surface and there is hyperemia in the internal organs. As the chill subsides, the blood rushes to the surface of the body. While the internal arteries and veins are congested in this way, the return of the venous blood to the heart is impeded, and it is to regulate this that the thirst at this time is due. The quinin should reach the young parasites during their least resistant phase, that is, at the beginning of the chill. This can be accomplished by having the patient drink a large quantity of water containing less than 0.50 gm. of quinin. As the water is absorbed so rapidly, it diffuses through the whole vascular system and acts on the parasites in their remotest haunts as effectually as if the drug had been injected internally. He gives 0.20 gm. of quinin, with an arsenical preparation, on four successive days, always at the same hour, the first dose at the beginning of the chill. The paroxysm is more severe than previously, treated in this way, but no symptoms of toxic action from the drug are apparent.

Prensa Medica Argentina, Buenos Aires

Feb. 10, 1919, 5, No. 25

*Gummatous Pelvic Cellulitis. M. R. Castex.—p. 245.
Coxalgia in Boy of Ten from Inherited Syphilis. J. C. Vivaldo.—p. 246.
*Adaptation of Micro-Organisms and Phagocytosis. A. Bachmann.—p. 248.
Lesions of Nerve Fibers in Alcoholism. A. Jones.—p. 249.
*Cerebral Nystagmus. R. Argañaraz.—p. 250. Conc'n.
*Sugar Treatment of Pulmonary Tuberculosis. A. Raimondi.—p. 251.

Gummatous Pelvic Cellulitis.—Castex recently encountered two cases of gummatous pelvic cellulitis in the course of three months in men of 28 and 32. Intestinal disturbances had been noted for several months and a large tumor could be palpated, filling the pelvis but evidently not encroaching on the peritoneal cavity. There had been considerable loss of weight in both cases, and a sarcoma was suspected in the first. Signs of inherited syphilis were pronounced in one of the men; in the other it was impossible to tell whether the syphilis had been inherited or acquired. The remarkably good general condition suggested the possibility of gummatous cellulitis instead of malignant disease, and under intensive treatment for syphilis the whole clinical picture subsided completely in two or three months. The gummatous infiltration through the cavity of Luschka readily explained the symptoms from the rectum, bladder and prostate in both cases. The peritoneum was pushed up. In conclusion, Castex warns that the treatment had to be both intensive and prolonged to realize the complete cure. He knows of only one similar case on record, that reported by Fournier in 1912 in which the cellulitis had been the work of inherited syphilis in a man of 34.

Adaptation of Microbes to the Medium.—Bachmann's experimental research apparently establishes that when typhoid bacilli, for example, are injected into the peritoneum of a guinea-pig, they become transformed in a way that enables them to resist phagocytosis. This phase does not last long, but during it the bacilli seem to generate products which have the effect of repelling the leukocytes from the peritoneal cavity. The consequence is that, after this phase, although the bacilli no longer resist phagocytosis, yet there are not enough phagocytes present to make any impression on them.

Cerebral Nystagmus.—Argañaraz presents anatomic and experimental evidence which apparently demonstrates that conjugated deviation of the eyes, paralyses of association and nystagmus are symptoms from lesions all located in the same anatomic territory; this he describes and explains with charts. He analyzes the spasmodic type of nystagmus, from irritation of the cortex, and the paralytic type, and reviews the features of the nystagmus accompanying different affections involving the cerebrospinal axis.

Sugar Treatment of Pulmonary Tuberculosis.—Raimondi found that injections of saccharose by Lo Monaco's technic gradually reduced expectoration and the cough but did not modify the fever. He was impressed with the value of the vasoconstricting action in combating the tendency to hemoptysis. The leukocytes increased in number, particularly the neutrophil polynuclears, while the lymphocytes declined in numbers and the general health improved, but the pulmonary process did not seem to be influenced with the sugar treatment in the least, in his experience at the Hospital Tornu.

Rev. Sud-Amer. de Endocrinologia, etc., Buenos Aires

Jan. 15, 1919, **2**, No. 13

*Tubercle Bacilli and Iodin Vapors. S. Dessy.—p. 1.
*Emetin with Amebic Liver Abscess. R. A. Marotta.—p. 3.

Tubercle Bacilli Cultures Subjected to Iodin Vapors.—Dessy places a few scraps of iodin in a perforated tube extending into an Erlenmeyer jar containing culture medium in which tubercle bacilli are growing. The tube does not touch the fluid below, but the vapors from the iodin escape through the perforation above. The virulence of the tubercle bacilli was attenuated thereby, but similar experiences with anthrax bacilli and staphylococci show that the latter are more susceptible than tubercle bacilli.

Emetin with Amebic Liver Abscess.—Marotta insists that emetin should always be given a trial at least before operating for an amebic abscess in the liver. In his fifty cases, nearly all the patients recovered under the subcutaneous injection of emetin alone. At most, puncture and aspiration of the pus supplemented the emetin.

Semana Medica, Buenos Aires

Jan. 23, 1919, **26**, No. 4

*Spermatic Fluid as Aid in Diagnosis of Syphilis. V. Widakovich and M. Sires.—p. 79.
Thread Drainage of Hydrocele. J. Nin Posadas.—p. 81.
Relation Between Sanitary Progress and the Pandemic of Influenza. E. R. Coni.—p. 87.
*Improved Test Tubes for Research on the Blood. C. A. Grau.—p. 89.
Artificial Cells. A. L. Herrera.—p. 99.

Diagnosis of Syphilis from Spermatic Fluid.—Widakovich and Sires were impressed by the large proportion of deformed spermatozoa found in the spermatic fluid of syphilitics in comparison with normal conditions. In their examination of normal spermatic fluid they found only about 4.54 per thousand spermatozoa with two heads, two tails or other malformations, but in the syphilitics the proportion averaged 26.12, and in one syphilitic of 20, whose infection dated from sixteen months and had been given energetic treatment, the Wassermann reaction veering to negative, 19 spermatozoa were found with two tails, 7 with two heads, 6 with three tails, 7 with two heads and two tails, one with a small head and four tails, one with two heads and three tails, and other pathologic forms to a total of 101 in each thousand specimens. Another young man of the same age and other conditions, free from venereal disease, had only 11 per thousand pathologic forms. The proportions did not vary much in examinations at different intervals. One man with positive Wassermann reaction whose wife had had two abortions, showed 57 per thousand pathologic spermatozoa but the proportion dropped to 32 per thousand after energetic arsphenamin treatment. They spread small drops of the fresh semen on a slide, exposing it to the fumes of 1 per cent. osmic acid until it looks slightly grayish, and drying in the air like a specimen of blood. They stain with a mixture of recently saturated and filtered anilin water (agua de anilina) with as many drops of a saturated alcoholic solution of gentian violet as are needed to give the metallic glitter to the scum on the surface of the fluid. The stain is left in contact for two to five seconds and is then rinsed off for thirty to sixty seconds with running water.

Improved Test Tubes for Research on the Blood.—The advantages are obvious of the tubes which Grau proposes for sending blood for examination and for other purposes. They are ordinary test tubes which are heated in the flame till the glass softens, a short distance from the bottom. Then with a nail the glass is forced inward, partly closing the lumen at this point from both sides. A similar constriction is then made at a point a little further along, the lumen thus presenting two narrower points. The tube just above the middle is drawn out to make the whole tube narrower for a certain stretch. An opening can be made below this by heating the glass at the desired point and blowing into the tube from the top, fusing the top afterward. The blood can be injected from the syringe into this opening, and it clots much more completely and more evenly in the tube with these two narrow beadlike constrictions than in an ordinary tube, and the coagulum does not get shaken around and broken up in transit. Or, when the clot has entirely retracted, the tube can be inverted and the serum collecting in the other end of the tube can be hermetically sealed as in an ampule by breaking the tube in the middle and fusing the end.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Feb. 1, 1919, **1**, No. 5

*Torsion of the Pedicle of the Spleen. J. W. Kopp.—p. 379.
*The Nails with Arsenical Polyneuritis. R. A. Mees.—p. 391.

Torsion of the Pedicle of the Spleen.—Kopp concludes from a personal case reported in detail and study of the literature, that splenectomy should be the routine treatment with torsion of a movable spleen. He even advocates splenectomy as a precautionary measure when the movable spleen is large and liable to make trouble later. Otherwise he insists that the movable spleen must be replaced and fastened. Some believe that the congested spleen, once replaced, will become reduced to normal size, but Hall observed nothing of the kind in his eight cases in the course of the following year. The mortality with splenectomy for torsion of the spleen, was 11.5 per cent. in the thirty-five cases compiled. The sudden onset with intense pain and symptoms from the peritoneum, the tumor developing in a few hours, its shape suggesting that of a large spleen, and the absence of the normal area of dulness over the spleen, aid in differentiating torsion of the spleen. There is no rigidity of the abdominal wall at first. He warns against reducing the torsion, with splenopexy, as the organ may have been too much damaged to recuperate. Splenopexy may be followed by recurrence; and reduction of the spleen, trusting to adhesions to fasten it in place, usually proves illusory.

The Nails with Arsenical Polyneuritis.—Mees has encountered three cases in which an attempt at suicide or murder, with arsenic, was followed by the development of a broad white band or frame in the finger nails. All the nails were affected, and as the white band reached the outer edge of the nails it grew less distinct. After discussing this phenomenon from various points of view, he expresses his conviction, and gives his reasons therefor, to the effect that the white band is an actual deposit of arsenic in the nails. The discovery of these broad white bands in the nails with arsenical polyneuritis will confirm the diagnosis. The band is still distinct long after the arsenic has disappeared from the urine.

Hospitalstidende, Copenhagen

Jan. 22, 1919, **62**, No. 4

*Ulnar Neuritis After Trauma of Elbow. A. V. Neel.—p. 97. Commenced in No. 3, p. 65.
Narcotic Action of Magnesium Salts. H. C. Gram.—p. 110. Cont'n.

Ulnar Neuritis After Injury of the Elbow.—The special feature of five of the ten cases reported by Neel is that about fifty years had elapsed between the trauma of the elbow and the neuritis. The trauma had occurred at the age of 2, 4, 5, 6, 16 and 17, and in a number of cases on record the trauma had occurred in childhood although the deforming arthritis did not develop until adult life. In five of his ten cases the elbow was in a valgus position. The elbow may develop serious disturbance after an apparently slight trauma. When the elbow is held partly flexed all the time, the full excurflexion of the elbow thus hindered, the ulnar nerve is kept constantly stretched. In his other five cases, the intervals had been from twenty-five to thirty-five years. The paresthesias and pain spreading through the forearm, especially on the ulnar side, and the inability to use the thumb as usual are generally the first symptoms. As a rule, the elbow shows such changes that the trouble is recognized at once, but the connection with such remote trauma is hard to establish. In one of his cases the atrophy of muscles from the pathologic condition of the ulnar nerve—a consequence of the deforming arthritis in the elbow—was ascribed to some process acting on the spinal cord, and a futile exploratory laminectomy had been done. This mistake was made also in some of the cases on record. After the numbness and other sensory disturbances in the ulnar domain first attract attention, the course is rapid, the paresthesias and pains growing more pronounced during the following six months to a year and the hand growing weaker. The changes in the elbow are of different kinds but all injure the ulnar nerve, the resulting lesions being an interstitial neuritis with hypertrophy of the nerve, or a more acute process. As the condition is usually of such long standing, there is not much hope of relief from operative measures. The nerve has generally adapted itself to the exostoses.

Hygiea, Stockholm

Feb. 28, 1919, 81, No. 4

rimary Sarcoma in the Pleura. R. Roman.—p. 174.

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Nordiskt Medicinskt Arkiv, Stockholm

Jan. 24, 1919, **51**, Surgical Section *No. 3*

*Rupture of Intestine from Contusion. G. Söderlund.—p. 191. In German.

Rupture of the Intestine from Contusion.—Söderlund discusses separately the clinical picture and indications with intraperitoneal and retroperitoneal subcutaneous rupture of the bowel, describing 16 cases of the former given operative treatment at the surgical clinic at Uppsala or Gothenburg since 1910; also 37 cases of retroperitoneal rupture on record, including 8 in which no operation was attempted and one case from his own experience. The general symptoms, shock and the temperature and pulse are instructive when they confirm the local findings but otherwise are not decisive. In the dubious cases, the patient once in the hospital, hourly or still more frequent examination of the abdomen, watching for spontaneous pain or aggravation of already existing pain, and tenderness in the abdominal wall, with palpation of the rectum, watching for tenderness or bulging of the rectal wall, and percussion, seeking for dulness in the region of the contusion, will warn of incipient peritonitis. He wiped out the abdominal cavity but never rinsed, suturing at once without draining. Over 72 per cent. of the patients recovered, and the fatal cases were the severer cases from the first. With a retroperitoneal rupture, operative treatment is difficult to plan and to carry out, the posterior wall of the bowel being hard to reach and still harder to suture. In most cases the resulting phlegmon spreads in the right side to the right kidney and along the psoas down to the pelvis. In his case, however, the phlegmon was on the left side. Death may follow from the diffuse peritonitis set up by the phlegmon or from its exceptionally toxic action. The greatest danger, however, is that when the abdomen has been opened, the retroperitoneal rupture may escape discovery. This occurred in 11 of the cases cited from the literature. The most characteristic finding is a bulging of the posterior parietal peritoneum in the region of the duodenum. Suture of a retroperitoneal rupture is not so easy as with the intraperitoneal, and in some of the cases the suture gav[illegible] hand, 3 of the patients were saved by a suture alone, a. seems indicated in the cases with comparatively sma ture, that is, not longer than half the periphery of the or when the wall of the bowel has not been much cr or the trauma is comparatively recent, that is, with an val of less than twelve hours. One case in which suture was done after an interval of seventeen hou minated fatally while the patient recovered in anothe with interval of only nine hours. Gastro-enterosto spare the suture strain, was done in some cases b advantages of this do not seem great enough to com the operation with it in most cases. Exclusion of the might be considered in connection with it as maki result more certain. But the general condition of the must decide here. Kranz resected the duodenum and both stumps, finishing with anterior gastro-enterostom patient died the twenty-eighth hour thereafter. In 2 cases with simple suture done after an interval of sev and twenty-four hours, the suture burst; resection injured stretch might have saved these patients: both men lived a week. Catgut had been used, but the ne findings showed that it would have made no difference suture had been done with silk. Söderlund discusses the special technics for rupture at different points bowel.

Ugeskrift for Læger, Copenhagen

Feb. 13, 1919, **81**, *No. 7*

*Idiopathic Dilatation of the Esophagus. J. P. Gregersen.—p. 2
*The Wassermann Reaction in Public Hospital. E. Meulengr p. 283.
Dietary of Average Family in Denmark in 1916. M. V. Bjørum Heiberg.—p. 287.
*Treatment of Dryness in the Throat. J. Kragh.—p. 303.

Idiopathic Dilatation of the Esophagus.—Gregerse cusses the present status of our knowledge of idio dilatation of the esophagus, saying that in the major cases it is the result of spasm of the cardia. Occasio however, it is due to paralysis of the musculature esophagus, and he reports a case of this latter kind. cardia was of normal size, but the esophagus musculatu not work properly. He corrected the resulting conditi enlarging the opening of the cardia. This allowed the in the esophagus to drop into the stomach by its own w and there were no further disturbances. The cardia dilated in the simplest and easiest way by introduc catheter passed through a rubber bag, fastened airtig the catheter, commencing near the tip and extending for some distance. After the tip has been pushed th the cardia, the rubber bag is inflated with air or filled water, the pressure regulated by a manometer. Regula strong pressure can thus be exerted on the cardia, a rubber bag can be inflated to a circumference of 12 cm. rubber bag is made with two layers of rubber with o silk between.

The Wassermann Reaction at a General Hospital.—Me gracht states that a positive reaction was obtained in cent. of 504 of the patients in the medical service Rigshospital. In 1.2 per cent. the positive reaction w that called attention to the syphilis. Less than 50 per were aware of their infection or even suspected its poss Nearly 15 per cent. of the patients with cardiovascula ease were syphilitic, and 12 per cent. of the nephritics

Chronic Dry Rhinopharyngitis.—Kragh describes cases in which after an operation on the nose, or s neously, the throat became so dry and parched as constant annoyance. He reasoned that the dryness result of too rapid and ample passage of the air throu nasopharynx, not allowing it time to get the normal i nation with moisture. To remedy this, he advised the pa to wear a small pledget of cotton in each side of the not large enough to interfere with the breathing but ch to some extent the inflow of air, and catching some moisture in the outgoing air so that the entering air better chance to become slightly moist. The results passed his anticipations. The patients wear the pledgets when they feel the need of them. His communication is [illegible] Proceedings.

sions of the elbow thus hindered, the ulnar nerve is kept constantly stretched. In his other five cases, the intervals had been from twenty-five to thirty-five years. The paresthesias and pain spreading through the forearm, especially on the ulnar side, and the inability to use the thumb as usual are generally the first symptoms. As a rule, the elbow shows such changes that the trouble is recognized at once, but the connection with such remote trauma is hard to establish. In *one of his cases the atrophy of muscles from the pathologic* condition of the ulnar nerve—a consequence of the deforming arthritis in the elbow—was ascribed to some process acting on the spinal cord, and a futile exploratory laminectomy had been done. This mistake was made also in some of the cases on record. After the numbness and other sensory disturbances in the ulnar domain first attract attention, the course is rapid, the paresthesias and pains growing more pronounced during the following six months to a year and the hand growing weaker. The changes in the elbow are of different kinds but all injure the ulnar nerve, the resulting lesions being an interstitial neuritis with hypertrophy of the nerve, or a more acute process. As the condition is usually of such long standing, there is not much hope of relief from operative measures. The nerve has generally adapted itself to the exostoses.

Hygiea, Stockholm

Feb. 28, 1919, **81**, No. 4

*Primary Sarcoma in the Pleura. R. Roman.—p. 174.

Sarcoma in the Pleura.—Roman was impressed by the absence of cough and expectoration in the young man who herwise had presented symptoms of pleurisy with effusion several weeks. The local pain kept at the same point, puncture released a hemorrhagic effusion but there was of the usual relief thereafter. A tumor finally became [illegible] confirmed by necropsy a month later which dis[illegible] round-cell sarcomatous bunches scattered over the [illegible] pleura.

Nordiskt Medicinskt Arkiv, Stockholm

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Dietary of Average Family in Denmark in 1916. M. V. Bjørum Heiberg.—p. 287.
*Treatment of Dryness in the Throat. J. Kragh.—p. 308.

Idiopathic Dilatation of the Esophagus.—Gregersen *cusses the present status of our knowledge of idiop* dilatation of the esophagus, saying that in the majorit cases it is the result of spasm of the cardia. Occas however, it is due to paralysis of the musculature of esophagus, and he reports a case of this latter kind. cardia was of normal size, but the esophagus musculatur not work properly. He corrected the resulting conditio *enlarging the opening of the cardia.* This allowed the in the esophagus to drop into the stomach by its own we and there were no further disturbances. The cardia dilated in the simplest and easiest way by introduci catheter passed through a rubber bag, fastened airtig the catheter, commencing near the tip and extending for some distance. After the tip has been pushed th the cardia, the rubber bag is inflated with air or filled water, the pressure regulated by a manometer. Regular strong pressure can thus be exerted on the cardia, as rubber bag can be inflated to a circumference of 12 cm. *rubber bag is made with two layers of rubber with o* silk between.

The Wassermann Reaction at a General Hospital.—Me gracht states that a positive reaction was obtained in cent. of 504 of the patients in the medical service Rigshospital. In 1.2 per cent. the positive reaction w that called attention to the syphilis. Less than 50 per were aware of their infection or even suspected its possi Nearly 15 per cent. of the patients with cardiovascular ease were syphilitic, and 12 per cent. of the nephritics.

Chronic Dry Rhinopharyngitis.—Kragh describes cases in which after an operation *on the nose, or s* neously, the throat became so dry and parched as constant annoyance. He reasoned that the dryness result of too rapid and ample passage of the air throu nasopharynx, not allowing it time to get the normal i nation with moisture. To remedy this, he advised the pa to wear a small pledget of cotton in each side of the not large enough to interfere with the breathing but ch to some extent the inflow of air, and catching some moisture in the outgoing air so that the entering air better chance to become slightly moist. The results passed his anticipations. The patients wear the pledget when they feel the need of them. His communication is in Society Proceedings.

drops of 15 per cent. sodium hydroxid after the solution has cleared, and, when in doubt, he resorts to the use of litmus paper. In spite of these measures reactions will occur, and since those cases seen responded to epinephrin, it is Beeson's belief that suprarenal insufficiency is the determining factor in their production. Hence epinephrin is administered. One milligram may be given intramuscularly ten minutes before the intravenous injection. In those presenting marked nitroid crisis, Beeson has not hesitated to give double that amount.

Annals of Surgery, Philadelphia

January, 1919, **69**, No. 1

*Treatment of Compound Fractures of Skull with Open Dura. E. Sachs, St. Louis.—p. 1.
*Source of Error in Interpretation of Roentgenograms of Skull. S. Moore, St. Louis.—p. 4.
*Surgical Treatment of Cancer of Superior Maxilla. W. S. Schley, New York.—p. 8.
Operative Treatment of Harelip and Cleft Palate. J. H. Nicoll, Glasgow.—p. 12.
*Nonparasitic Cysts of Spleen. A. V. S. Lambert, New York.—p. 15.
*Variability of Pathology and Symptoms of Chronic Intestinal Obstructions. M. Behrend, Philadelphia.—p. 21.
*Resection of Cecum and Ascending Colon. J. S. Horsley, Richmond, Va.—p. 25.
*Torsion of Appendices Epiploice. V. C. Hunt, Rochester, Minn. —p. 31.
*Legg's Disease: Arthritis Deformans Juvenilis: Osteochondritis Deformans Juvenilis: "Perthe's Disease." L. W. Ely, San Francisco.—p. 47.
Use of Rubber Gloves in Surgical Operations. R. T. Morris, New York.—p. 52.

Compound Fractures of Skull.—In cases of this type Sachs advocates the excision of all traumatized tissue, scalp, dura, and brain tissue, replacing the defect in the dura by a transplanted piece of fascia and closing the skin completely without drainage. He has applied this method in two cases with most satisfactory results. The cases are cited.

Roentgenograms of Skull.—It is claimed by Moore that the radiolucent semilunar shadows seen so often in roentgenograms of the head are due to faulty apparatus, especially the cassette, and are of no clinical significance.

Cancer of the Superior Maxilla.—Early and thorough operation is advocated by Schley, thus often leading to a cure because cancer of the upper jaw, especially in the maxillary antrum, remains a local disease until comparatively late. With good preparation and technic the operative mortality is not large. Not a few even advanced cases are cured by a thorough operation.

Nonparasitic Cysts of Spleen.—The case cited by Lambert substantiates the fact that there is no group of symptoms which can be recognized as characteristic of splenic cysts. The cases present a varied picture referable to neighboring organs and directly due to the great enlargement. The spleen was removed successfully in this case, which is presented because it brings up the interesting question of the pathogenesis of cysts lined by connective-tissue cells occurring in various parts of the body, as in bones, thyroid gland, omentum, mesentery and elsewhere. Twelve years previously the patient was severely injured in an automobile accident. Lambert suggests that the cysts may have developed as the result of an infarct or a hematoma.

Chronic Intestinal Obstruction.—Pain was a constant symptom in the four cases cited by Behrend, not always, however, specific in character as to the location of the lesions. Vomiting, a constant symptom in acute intestinal obstruction, was present to a considerable degree in only one case. The other patients vomited rarely or not at all. The pulses of all the patients were not rapid. Another striking feature was the absence of toxemia in these cases, so commonly found in acute cases. All the patients reported recovered, and are still enjoying good health, whereas in acute intestinal obstruction the mortality is 50 to 60 per cent. In two cases the obstruction was caused by adhesions, in another by a slowly forming volvulus. The fourth case, one of purpura hemorrhagica intestinalis, illustrates one of the rarest conditions causing symptoms of chronic intestinal obstruction. A diagnosis of cholecystitis was made on account of the greatest tenderness being in the right hypochondriac region. Gallbladder disease was actually present on account of the black gummy bile which flowed with great difficulty through the cannula. On making a separate incision to remove the appendix an excess of intraperitoneal fluid was noted. This led to the discovery of the hemorrhagic masses extending from the jejunum and including the ileum.

Resection of Cecum and Ascending Colon. — Horsley describes the operative technic which he employed in seven cases of resection of the cecum and ascending colon. In all of them the principles of end-to-end union, ligation of the triangular space on the mesenteric border of the bowel before opening the bowel, and cleaning out the ends of the bowel before suturing were carried out, though in only one case was a valve formed. In one case, the Barber operation was performed, transplanting the ileocecal valve. All of the patients recovered from the operation satisfactorily. An enterostomy was not done in any of these cases.

Torsion of Appendices Epiploicae.—To the cases reported in literature Hunt adds eleven cases which have been under observation in the Mayo Clinic in the past ten years. Seven of these cases are true torsion of the appendix epiploica; one is of doubtful torsion, acting as a band producing intestinal obstruction; two are of incarceration in a left inguinal hernia, and one is of a foreign body in the peritoneal cavity with unproved origin from an appendix epiploica. Four of the cases of torsion presented acute symptoms, for which operation was done, and in the remaining three cases the torsion was probably symptomless, as it was found in the course of abdominal operations for other pathologic conditions. The cases in which there was incarceration in a hernial sac presented symptoms of incarceration of the hernial contents. The foreign body was found in the course of an operation for postoperative hernia, and the appendix epiploica, producing the obstruction of the sigmoid, manifested symptoms of chronic intestinal obstruction.

Legg's Disease.—Legg's disease is an error in development of the whole upper epiphysis of the femur—trochanter, neck and head. In this the acetabulum sometimes shares. It affects chiefly the head and the proximal lateral portion of the neck, and the cartilage between them. The great trochanter may or may not be involved. Five cases are reported by Ely.

Archives of Pediatrics, New York

December, 1918, **35**, No. 12

*Anaphylaxis and Its Relations to Some Diatheses Common to Infancy and Childhood. F. W. Schlutz and W. P. Larson, Minneapolis. —p. 705.
*Mantoux Reaction in Children. O. Reiss, Los Angeles.—p. 714.
Minnesota Plan for Establishment of Infant Welfare Clinics in Smaller Towns. E. J. Huenekens, Minneapolis.—p. 718.

Anaphylaxis.—The experimental work done by Schlutz and Larson consists of the passive sensitization of guinea-pigs against foreign protein by injecting them with the blood serum of patients who seemed to be anaphylactic to these proteins. Their clinical observations were made on four types of cases: (1) extreme atrophy cases; (2) cases of overfeeding with cow's milk; (3) periodic vomiting cases, and (4) cases of the constitutional diathesis styled by Czerny the inflammatory exudative diathesis. The technic adopted was the following: from 3 to 5 c.c. of blood was drawn from the patient. This was allowed to clot and then centrifuged and about one half that quantity of serum obtained. Such serum was injected either intravenously or intraperitoneally into guinea-pigs of 250 to 300 gm. As a rule, the animals showed no signs or ill effects from the serum. Twenty-four hours later the animals were injected with a small quantity of milk, usually intraperitoneally, although sometimes the intravenous method was used. The quantity of milk injected varied from 0.1 to 1.0 c.c. Marked anaphylactic phenomena were obtained in the animals which had received the blood serum from inflammatory exudative diathesis cases. In several of the periodic vomiting cases, similar phenomena were observed. Some of the animals presented the typical picture of Smith's phenomenon. In some of the cases the reaction was followed by bloody stool. Death often occurred within twenty-four hours following the experiment, but more often from two to five days later. The experiments with marasmus, milk overfeeding, and periodic vomiting have not as yet been completed. The results so far obtained, however, would indicate that the reaction is not as clear cut as in the cases of inflammatory exudative diathesis. From the results of their work thus far it appears to Schlutz and Larson that in at least one type of cases studied (inflammatory exudative diathesis type) definite anaphylaxis to foreign protein exists, and that probably the majority of the phenomena occurring in this condition are truly anaphylactic.

Mantoux Reaction in Children.—For the purpose of checking up the von Pirquet test with some other of the cutaneous tuberculin test, Mantoux intracutaneous injection was done by Reiss on children. A solution of old tuberculin in normal salt solution, 2 min., or 0.005 mg., was used for the Mantoux; normal salt solution for the control. Nineteen of the 120 cases gave positive reactions; one doubtful reaction was classed as negative. The von Pirquet test was never positive in the absence of a positive Mantoux. It was negative in three cases which gave a positive Mantoux. Seventeen of the nineteen positives displayed adenopathy, and of these thirteen, only in two were the posterior cervicals enlarged. Reiss concludes that the intracutaneous tuberculin test when carefully performed seemed somewhat more reliable than the von Pirquet. Tuberculous meningitis cases apparently do not respond to cutaneous tuberculin tests (four cases after repeated tests uniformly gave negative results). The presence of posterior cervical adenopathy in children is highly suggestive of tuberculous infection.

Bulletin of Johns Hopkins Hospital, Baltimore

February, 1919, **30**, No. 336

*Fluoroscopy of Cerebral Ventricles. W. E. Dandy, Baltimore.—p. 29.
Stereoroentgenograms of Injected Lung as Aid to Study of Lung Architecture. W. S. Miller, Baltimore.—p. 34.
*Electromyographic Study of Chorea. S. Cobb, Baltimore.—p. 35.
Pharmacological Appreciation of Biblical Reference to Mass Poisoning. II Kings IV, 38-41. D. I. Macht, Baltimore.—p. 38.

Fluoroscopy of Cerebral Ventricles.—The lateral cerebral ventricles, when filled with air, can be clearly seen under the fluoroscope; twenty-five cases having been studied by Dandy by this method. The results in adults are equally as good as in children. By fluoroscopy hydrocephalus can be diagnosed accurately at all stages of its development. Several unsuspected cases of hydrocephalus have been demonstrated by the fluoroscope. The diagnosis of a false ventricular hernia (ventriculocele) was made with certainty, because the air from the ventricle could be seen to pass directly into the swelling. Fluoroscopy of the ventricle has practically the same range of utility as ventriculography, and almost the same results have been obtained. Following the injection of air into the ventricles, both fluoroscopy and ventriculography should be used.

Electromyographic Study of Chorea.—Five chorea patients were studied by Cobb. He found that choreiform movements give an electromyogram similar to that of a short, normal, voluntary muscular contraction. The inability to maintain voluntary contraction is clearly shown in the electromyograms. Weakness of muscular contraction is shown electromyographically by the lessened electrical discharge.

Canadian Medical Association Journal, Toronto

February, 1919, **9**, No. 2

*Clinical Study of Four Hundred Patients with Bronchial Asthma. I. C. Walker, Boston, Mass.—p. 97.
Military Ophthalmology. S. H. McKee, West Cliff, England.—p. 108.
Arsenic in Syphilis. W. T. Lockhart and J. R. Atkinson, Whitley, England.—p. 129.
Venereal Diseases: Treatment and Cure. O. Wilson, Ottawa.—p. 136.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. E. Grenier, Montreal.—p. 141.
Eyesight of Negroes of Africa. J. N. Roy, Montreal.—p. 144.
Influenza Epidemic in Quebec Garrison. E. A. Robertson, Ottawa.—p. 154.
Pleurisy: Experimental and Clinical. R. C. Paterson, Saranac Lake, N. Y.—p. 160.

Clinical Study of Bronchial Asthma.—Of 400 cases of bronchial asthma studied by Walker, 191, or 48 per cent., gave a positive skin test and were, therefore, sensitive to some protein. Although the prevalence of asthma between the two sexes was about equally divided, the percentage of sensitive cases was a little higher among the males than among the females. The same number of patients had their first attack of asthma at each period of years with the exception that after the age of 45 there was a great decrease and after the age of 60 there were only three cases. The number of persons who developed asthma under the age of 2 and between the ages of 2 and 5 was as great as at any other age. The relationship between the age of onset of asthma and the sensitization of the individual is important. Four fifths of the patients who began to have asthma during infancy were sensitive, two thirds who began during childhood were sensitive; one half of those beginning asthma during young adult life were sensitive, one fourth of those beginning asthma during adult life were sensitive, and none were sensitive that began asthma after the age of 50; as the age of onset of asthma increases, the frequency of sensitization decreases. More patients were sensitive to the protein of *Staphylococcus pyogenes-aureus* than to any other type of bacterial protein, however, sensitization to the protein of *Staphylococcus pyogenes-albus* and the various streptococci was sufficiently frequent to warrant routine tests with these. In the above table the number of positive reactions with bacterial proteins is too conservative since many definitely positive reactions which do not measure 0.5 in diameter are obtained. It is of interest to note the effect of occupation on sensitization after the age of 40. Of the eleven patients who became sensitive to proteins after the age of 40, four were bakers and were sensitive to wheat protein, one was a hostler and was sensitive to horse dandruff protein, and another who was a sifter of green coffee beans was sensitive to green coffee protein. Seventy-eight patients were sensitive to the protein derived from animal hair. Sixty-eight patients were sensitive to food proteins. Ninety-two patients were sensitive to pollens.

Indiana State Med. Association Journal, Indianapolis

Feb. 15, 1919, **12**, No. 2

War Neuroses. H. T. Patrick, Chicago.—p. 33.
Present Status of Radium Therapy. T. C. Kennedy, Indianapolis.—p. 36.
Industrial Clinic. M. A. Austin, Anderson.—p. 40.
Infant Conservation. A. E. Schweitzer, Indianapolis.—p. 44.

Iowa State Medical Society Journal, Des Moines

Feb. 15, 1919, **9**, No. 2

Gynecology and War. E. Ries, Chicago.—p. 35.
Significance of Abdominal Pain. H. C. Jungblut, Tripoli.—p. 38.
Education of Deaf in Iowa. J. H. Spencer, Dubuque.—p. 46.
Repair of Ear Drum. A. J. Joynt, Waterloo.—p. 51.
Graduated Tonsillectomy. F. G. Murphy, Mason City.—p. 53.

Journal of Biological Chemistry, Baltimore

February, 1919, **37**, No. 2

Biologic Values of Wheat and Almond Nitrogen. A. F. Morgan, and A. M. Heinz, Berkeley, Calif.—p. 215.
Method of Expressing Numerically Growth Promoting Value of Proteins. T. B. Osborne, L. B. Mendel and E. L. Ferry, New Haven, Conn.—p. 223.
*New Titration Method for Determination of Uric Acid in Urine. J. L. Morris, Chicago and St. Louis.—p. 231.
*Comparative Distribution of Urea, Creatinine, Uric Acid, and Sugar in Blood and Spinal Fluid. V. C. Myers and M. S. Fine, New York.—p. 239.
Creatinuria and Acidosis. W. Denis and A. S. Minot. Boston.—p. 245.
*Antiscorbutic Property of Vegetables. I. Raw and Dried Tomatoes. M. H. Givens and H. B. McClugage, Rochester.—p. 253.
Physiochemical State of Proteins in Cow's Milk. L. S. Palmer and R. G. Scott, Columbia, Mo.—p. 271.
State of Proteins in Cow's Milk. L. L. Van Slykes and A. W. Bosworth.—p. 285.
*Dietary Properties of Pea (Vicia Sativa). E. V. McCollum, N. Simmonds and H. T. Parsons, Baltimore.—p. 287.
Modifications of Benedict's and Folin's Quantitative Sugar Methods. H. D. Haskins, Portland, Ore.—p. 303.
*Increase in Nitrogen Metabolism of Dog, Following Administration of Desiccated Thyroid. A. Rohde and M. Stockholm, San Francisco.—p. 305.
Acid-Base Balance in Animal Nutrition. I. Effect of Certain Organic and Mineral Acids on Swine. A. R. Lamb and J. M. Evvard, Ames, Iowa.—p. 317.
Id. II. Metabolism Studies on Effect of Certain Organic and Mineral Acids on Swine. A. R. Lamb and J. M. Evvard, Ames, Ia.—p. 325.

Determination of Uric Acid in Urine.—A volumetric method for the determination of small amounts of uric acid in urine is described by Morris. It is based on the instantaneous and complete precipitation of uric acid as the zinc salt and a single direct titration with permanganate in a solution alkaline with sodium bicarbonate. The end-point used is the blue starch iodid color and, because of the mild nature of the oxidation and the excess iodid present, there is no fading to confuse the end-point.

Blood and Spinal Fluid.—Comparative analyses of blood and spinal fluid in fifteen cases are reported by Myers and Fine. The concentration of urea in the spinal fluid averaged 88 per cent. of that of the blood, the concentration of creatinin, 46 per cent.; that of uric acid, 5 per cent., and that of sugar, 57 per cent. These percentage differences represent the order of their solubility in water, and apparently also the order of their diffusibility.

Antiscorbutic Property of Vegetables.—The experiments carried out by Givens and McClugage show that the raw fresh tomato is a very efficient antiscorbutic agent. A small daily addition of this substance to a diet known to produce scurvy in guinea-pigs maintained these animals in apparently perfect health. Raw fresh tomatoes dried in a blast of air at either a low temperature (35 to 40 C.) or a high temperature (55 to 60 C.) retain a significant amount of their antiscorbutic potency. A daily supplement of 1 gm. of raw dried tomatoes protected guinea-pigs from experimental scurvy. Therefore, the tomato may be considered to contain some of the essential dietary substances.

Dietary Properties of Pea.—The data recorded by the authors contribute evidence in support of the general theory which they have formulated; viz., that vegetable foods having similar functions have likewise similar dietary properties. They also present records of experiments which show the supplementary relationships between the proteins of the pea and casein, gelatin, zein and lactalbumin, respectively. It is of great interest that while both casein and zein supplement the deficiencies of the pea proteins, gelatin and lactalbumin do not. From the failure of lactalbumin to supplement the proteins of the pea, or to induce growth when fed in the amounts used in the experiments described in this paper, the authors have come to the tentative conclusion that lactalbumin is either an incomplete protein or a poorly constituted one. They have been unable to obtain any growth in young rats with diets containing 18 per cent. of lactalbumin, as the sole source of protein, when the remainder of the food mixture was so constituted that good growth could be secured when the protein (18 per cent.) of the diet was casein.

Nitrogen Metabolism of Dog.—Experiments were undertaken by Rohde and Stockholm to determine how serviceable are small doses of commercial desiccated thyroid gland administered by mouth, as a means of increasing nitrogen elimination in the dog. The summary of results showing the average nitrogen figures for three days preceding thyroid feeding and for the days of administration, including two subsequent days, would indicate that a daily dose of 0.05 to 0.1 gm. of desiccated thyroid mixture per kilogram of body weight is a dose producing marked effect on nitrogen elimination and a somewhat greater percentage loss in weight than is found in the control animals. Nitrogen elimination in the dog receiving only sugar solutions may be increased approximately 50 per cent. by the administration, during a five to seven day period, of commercial disiccated thyroid gland in doses of 0.10 to 0.15 gm. per kilogram of body weight.

Journal of Cancer Research, Baltimore

January, 1919, 4, No. 1

*Virulence or Adaptation? W. H. Woglom, New York.—p. 1.
Mammary Carcinoma in Cat. S. Itami, New York.—p. 19.
*Power of Mesodermal Derivatives to Immunize Mice Against Transplantable Tumors. S. Itami, New York.—p. 23.

Virulence or Adaptation?—Woglom suggests that it is possible that the factor which usually decides whether or not a spontaneous tumor can be transplanted successfully is adaptation. But it is equally probable that multiple spontaneous neoplasms occasionally vary in their proliferative energy; in most of them this is so low after transplantation as to be masked by a failure on the part of the tumor cells to adapt themselves, though in the case of a few growths it rises so high as to transcend the adaptive power of these elements.

Mesodermal Derivatives to Immunize Mice.—Experiments were undertaken by Itami to determine whether any other tissues share with the lens, brain, cartilage and bone, their inability to elicit a vigorous immunity. Two mesodermal derivatives—muscle and lymph node—were chosen. In order that the findings might not be vitiated by the presence of blood in these tissues, the greatest care was taken not to injure large vessels during the removal of the material; the small amount of blood contained in the muscle and the lymph node themselves may be regarded as insufficient to produce any immunity. Muscles or lymph nodes were removed from healthy mice, emulsified, and administered subcutaneously in the left axilla of normal young adult mice in doses of 0.5 c.c. (lymph node) and 0.1 c.c. (muscle). Into the opposite axillae of the animals thus injected, and into untreated normal controls of the same size and breed which had been kept aside under identical conditions, grafts (0.003 gm.) of tumor were implanted one to four weeks after the preliminary treatment. It became evident that preliminary treatment with normal tissues containing but few cells, whether they be of ectodermal or mesodermal origin, fails to induce immunity to transplantable carcinomas. Muscle, also, though this is more cellular, is inactive, for some reason at present unknown. Lymph node, on the contrary, has the power to elicit a high resistance against transplantable carcinomas. The mesodermal tissues investigated have no power to immunize against two connective tissue tumors employed, failing like the skin, to protect against sarcoma.

Journal of General Physiology, Baltimore

November, 1918, 1, No. 2

Studies on Bioluminescence: VII. Reversibility of Photogenic Reaction in Cypridina. E. N. Harvey, Princeton, N. J.—p. 133.
Photic Sensibility of Ciona Intestinalis. S. Hecht, Omaha.—p. 147.
*Indicator Method of Measuring Consumption of Oxygen. W. J. V. Osterhout. Cambridge, Mass.—p. 167.
*Comparative Studies on Respiration. W. J. V. Osterhout, Cambridge, Mass.—p. 171.
*Id. F. G. Gustafson, Cambridge, Mass.—p. 181.
*Id. M. M. Brooks, Cambridge, Mass.—p. 193.
*Id. H. S. Thomas, Cambridge, Mass.—p. 203.
*Id. M. Irwin, Cambridge, Mass.—p. 209.
*Control of Rope in Bread. E. J. Cohn, S. B. Wolbach, L. J. Henderson and P. H. Cathcart, S. C., U. S. A.—p. 221.
Rate of Transmission in Nerve Net of Coelenterates. G. H. Parker, Cambridge, Mass.—p. 231.
Amphoteric Colloids. II. Volumetric Analysis of Ion-Protein Compounds. J. Loeb, New York.—p. 237.

Indicator Method of Measuring Consumption of Oxygen.—For estimating the amount of oxygen consumed in respiration, Osterhout has investigated a number of substances, among them *Limulus* blood. The blood of the horseshoe crab (*Limulus*) absorbs oxygen and turns blue when shaken in air. In the presence of certain organisms which consume oxygen it is quickly decolorized. By measuring the time required for the change of color the rate of consumption of oxygen may be determined.

Effects of Anesthetics on Respiration.—A series of investigations on respiration with improved quantitative methods is being made by Osterhout. They show that when anesthetics are employed in sufficient concentration to produce any result, plants show a rise in the rate of respiration which is followed by a fall. In the animals studied, the rise (found in higher concentrations only) was preceded by a temporary fall which is not entirely due to lowering of muscular activity or tonus. In lower concentrations the effect on animals was merely a decrease of respiration. The results of all the investigations are opposed to the theory of Verworn.

Effects of Ether and Acetone on Respiration.—The action of anesthetics and some other substances on the respiration of a fungus (*Aspergillus niger*) was studied by Gustafson. In concentrations which are high enough to produce any effect, formaldehyd, ether, and acetone cause an increase, followed by a decrease, in the rate of respiration. Three and sixty-five hundredths per cent. ether, which causes an increase with certain cultures, produces only a decrease in others. The reaction producing an increase in the respiration with 7.3 per cent. ether is a reversible process, while the reaction producing the decrease is not reversible. Five-tenths per cent. caffein produces only a decrease in respiration while a saturated solution causes an increase, which is followed by a decrease.

Effect of Ether on Respiration of Bacteria.—A series of studies on the respiration of bacteria has been undertaken by Brooks. The organism selected for experimentation was *Bacillus subtilis*. Several other organisms were tried, namely, *B. mycoides, Staphylococcus pyogenes-albus, S. citreus, B. typhosus;* but *B. subtilis* was preferred because it was easy to handle. In all the concentrations of ether studied (from 0.037 to 7.3 per cent.) there is an increase in the rate of respiration of *B. subtilis* followed by a decrease. In 7.3 per cent. ether in tap water there is an extraordinary increase in the output of CO_2 (amounting to fifty times the normal). This does not occur when 0.85 per cent. NaCl is added, which indicates antagonism between ether and NaCl. Ether is toxic in low concentrations (0.037 to 1.1 per cent.) and high concentrations (3.65 to 7.3 per cent.) but in intermediate concentrations (1.1 to 3.65 per cent.) stimulates growth.

Effect of Ether on Respiration of Wheat.—Thomas studied the effect of ether on the respiration of wheat. His results are recorded.

Effect of Ether on Carbon Dioxid Output.—The purpose of Irwin's investigation was to make a comparison of the CO_2 output of animals with that of plants under the influence of a typical anesthetic such as ether. The experiments on frog tadpoles, an aquatic insect, *Dineutes assimilis* Aube, frog eggs, and *Fundulus* embryos were used. These experiments show that narcosis is not due to asphyxia. The action of anesthetics is due to some other cause than the effect on respiration. There is a difference between the animals studied and the plants described in this series, since in animals the increase in the CO_2 output is accompanied by irreversible changes leading to death, while this is not necessarily the case in plants. The reversible (narcotic) action of ether on the animals studied was accompanied by a decrease in the carbon dioxid output; in plants this is not ordinarily the case.

Control of Rope in Bread.—Rope is a condition of bacterial decomposition of bread which leads to a peculiar slimy or ropy consistency of portions of the interior of the loaf, produces an odor resembling that of ensilage, and renders the loaf unacceptable. Several closely related organisms have been isolated from ropy bread, some or all of which are undoubtedly the effective agents of the decomposition. The present investigation made by Cohn and his associates has been on a strain of *B. mesentericus* isolated from a ropy loaf. These investigations clearly show that the growth *B. mesentericus* is a function of the hydrogen ion concentration of the medium and that it is favored by the diminished hydrogen ion concentration which is due to the products of its own metabolism. This change in the hydrogen ion concentration may serve as a measure of the growth of the organism and as a means of identification. When possible, the hydrogen ion concentration of bread should be maintained near 10^{-5}N. Such practice would prevent the occurrence of rope. The reaction of dough and bread may be controlled with the help of a suitable indicator, and perhaps more conveniently by the use of a buffer mixture consisting of lactic acid and a lactate or acetic acid and an acetate. At present the simpliest method of controlling the reaction of dough or bread consists in the use of methyl red. When this indicator is colored red rather then orange, the reaction is sufficiently acid to prevent the development of rope.

Kansas Medical Society Journal, Topeka

February, 1919, **19**, No. 2

Relation of Focal Infection and Protein Poisoning to Upper Respiratory Tract. J. E. Sawtelle, Kansas City.—p. 25.

Annual Registration in Medicine. C. F. Nelson, Lawrence.—p. 29.

Quinin Q. S. F. A. Carmichael, Oswatomie.—p. 31.

Maine Medical Association Journal, Portland

February, 1919, **9**, No. 7

Neglected Means of Diagnosis in Circulatory Diseases. S. J. Beach, Augusta, Me.—p. 169.

State Appropriations for Hospital Treatment for Poor. J. F. Babley, Augusta, Me.—p. 175.

Medical Record, New York

Feb. 22, 1919, **95**, No. 8

Gas Poisoning in Warfare. G. H. Cox, M. C., U. S. A.—p. 312.

Deformities of Nose Resulting from Syphilis. W. W. Carter, New York City.—p. 318.

Etiologic Factors Bearing on Therapeutics of Bell's Facial Palsy. J. H. Leiner, New York City.—p. 319.

Therapeutic Value of American Spas and Health Resorts. H. H. Roberts, White Sulphur Springs, W. Va.—p. 321.

Case of Acute Mastoiditis with Perisinus Abscess, Following Influenza Pneumonia. J. E. Sheehan, New York City.—p. 323.

Treatment of Scabies in Private Practice. C. G. Cumston, Geneva, Switzerland.—p. 324.

New York State Journal of Medicine, New York

October, 1918, **18**, No. 10

Is Cesarean Section Justifiable in Eclampsia and Placenta Praevia? G. L. Brodhead, New York City.—p. 389.

Two and One-Half Years with Conservative Treatment of Eclampsia. R. McPherson, New York City.—p. 395.

Fibroid Tumors of Uterus. J. Ill, Newark, N. J.—p. 399.

Some Causes of Still-Birth. J. C. Edgar, New York City.—p. 406.

Establishment and Maintenance of Breast Feeding. J. P. C. Griffith, Philadelphia.—p. 411.

Classification and Serum Treatment of Pneumonia at Camp Upton. R. L. Cecil, Camp Upton, N. Y.—p. 414.

Physician and Public. H. L. Winter, Cornwall, N. Y.—p. 418.

Wisconsin Medical Journal, Milwaukee

February, 1919, **17**, No. 9

Health Supervision of Working Children. G. P. Barth, Milwaukee.—p. 357.

Plan of Federal and State Government Control of Venereal Disease. C. A. Harper, Madison, Wis.—p. 362.

Elimination of Danger in Tonsil Operation and End-Results. F. Pfister, Milwaukee.—p. 369.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1919, **23**, No. 8

Conditions Found in Amputation Stumps. A. T. H. Nisbet.—p. 237.

Two Cases of Separate Centers of Ossification of Tubercle of Naviculare Pedis. C. E. Dennis.—p. 253.

Case of Myositis Ossificans Traumatica. D. Stone—p. 255.

Lateral Roentgenography in Suspected Injuries of Spine. H. C. Gage.—p. 260.

British Journal of Surgery, London

January, 1919, **6**, No. 23

*Cancer of Tongue: Bradshaw Lecture. D. Power.—p. 336.

Treatment of Cases of Fractured Femur at a Base Hospital. V. Hurley and S. H. Weedon.—p. 351.

*Operative Treatment of Ruptured Internal Lateral Ligament of Knee. T. P. McMurray.—p. 377.

*Procedure for Avoiding Colostomy and Colectomy. A. R. Short.—p. 382.

Displacement of Mandibular Meniscus and Its Treatment. J. H. Pringle.—p. 385.

Secondary Jejunal and Gastrojejunal Ulceration; Cases. G. Wright. p. 390.

Some Phenomena of Surgical Shock. A. R. Short.—p. 402.

Localization and Extraction of Foreign Bodies in Brain: New Apparatus. J. N. Fergusson.—p. 409.

*Study of Peripheral Nerve Injuries from a Surgical Aspect. J. L. Joyce.—p. 418.

Fracture of Femur: External Fixation of Fragments. D. W. Crile.—p. 458.

Fractures of Patellar Border. R. W. A. Salmond.—p. 463.

*Unusual Type of Fracture Dislocation of Upper End of Humerus. T. B. Davies.—p. 466.

Case of Septic Infarct of Spleen, Causing Rupture of Spleen, Hemorrhage and Death. A. H. Todd.—p. 467.

Bilateral Ovarian Dermoid Cysts Simulating Renal Colic. C. H. Fagge.—p. 468.

Cancer of Tongue.—Tobacco, alcohol and syphilis, Power shows, are closely associated in the causation of cancer of the tongue. At the present time syphilis is more prevalent than it has been for many years, and the consumption of tobacco has risen from 7½ million pounds in 1914 to 8½ million pounds in 1915. Much of this tobacco is smoked in the form of cigarets, and women now smoke on a much larger scale than they used to do. It follows, therefore, that if matters are allowed to continue as they are doing, there will be a huge increase in the number of patients suffering from cancer of the tongue. The increase should begin about 1950, and it should affect women as well as men. Power claims that such an increase can be presented by a thorough and systematic treatment of syphilis in its initial stages; for, cancer of the tongue has always increased in frequency some years after syphilis has been treated inadequately. Persons who are being treated for syphilis, therefore, should be told never to smoke, not to drink to excess, and to make regular visits to a dentist in order that their teeth may be kept in the best possible state, and that any dentures they may have to wear should be maintained well fitting and free from rough edges. Such advice should be given while the patient is actually under treatment for syphilis. It is useless to defer it until the tongue has become sore, because it is then too late in a large number of instances.

Operative Treatment of Ruptured Internal Lateral Ligament of Knee.—The operation done by McMurray in ten cases results in changing the insertion of the sartorius muscle tendon from the inner aspect of the upper end of the tibia to the inner aspect of the lower end of the femur. A slightly curved incision, convex posteriorly, is made from 3 or 4 inches above the adductor tubercle to 1 inch below the tibial insertion of the internal lateral ligament. The anterior flap is reflected forward, and this discloses all the structures on the inner aspect of the joint. Lying slightly posterior to the joint, and held back by the fascia which covers it, is the sartorius tendon, lying close to the semitendinosus and gracilis. The fascia which secures the sartorius in its normal posterior position should be divided along the whole extent of the operative incision, so that the tendon can now be freely advanced. The femoral insertion of the internal lateral ligament is now clearly defined, a vertical slit about 1½ inches long is made through it down to the bone, and through this slit a small vertical wedge of bone is removed from the femur, large enough to admit of the sartorius being placed into it. This removal of bone is accomplished without interfering to any extent with the attachment of the ligament to the femur, so that no further weakening of the ligament is caused by it.

The sartorius tendon is pulled forward and laid in the groove in the femur in such a manner that the portion of the tendon between the femur and the tibia is quite tight, and it is then sutured firmly into the groove by stitches passing through the periosteum and the ligamentous insertion. When this has been accomplished successfully, the outer aspect of the internal lateral ligament is first scarified and then the ligament is tightened up in the usual manner by suturing adjacent portions of the scarified surfaces together. The fascia is now sutured along the line of incision, and skin sutures complete the closure of the operation wound. The knee should then be retained in the semiflexed position by means of splints or plaster for the next three months, when it will be found that full extension of the leg will be secured in the course of two or three weeks.

The success of the operation depends on keeping the knee in the flexed position during the whole course of the procedure, and the subsequent retention of this position during the minimum period of three months, in order to prevent stretching at the new insertion which will undoubtedly occur if strain is allowed to fall on it before this interval has elapsed.

Procedure for Avoiding Colostomy and Colectomy.—Short performs an end-to-side ileosigmoidostomy with division of the ileum, the distal end being brought out into the wound. By passing a catheter through it into the cecum, the gas can be drawn off; and flushing with warm water, containing an ounce or two of magnesium sulphate mixture, can be given through the catheter, which effectually clears the bowel.

Peripheral Nerve Injuries from a Surgical Aspect.—This paper is devoted to the study of the surgical treatment of war-injured nerves. Joyce dwells mainly on the operative treatment. He cites many cases, chosen from about 200 cases treated by nerve transplants and double lateral implantations, suture, neurolyses: (*a*) complete physiologic divisions; (*b*) incomplete physiologic divisions; (*c*) painful lesions; (*d*) cases associated with aneurysms and brachial plexus injuries, and alternative operations. Joyce found that in the majority of cases, delayed end-to-end union of a divided nerve is successful, and this method of repair is that of choice. Exploration of a physiologic completely divided nerve should be done as soon as the condition of the wound permits. Neurolysis combined with a capsulectomy of spindle-shaped neuromas has been followed by recovery in most, and improvement in all, cases in which this has been done; exsection of a spindle-shaped neuroma is not justified unless failure has resulted from a neurolysis capsulectomy. Nerve transplantations, and double lateral implantations of the ulnar into the median in the forearm, have been followed with some measure of success, including some recovery of voluntary power in the affected muscles; but recovery is slow and uncertain. Nerve growth takes place from both ends of a divided nerve, and from both ends of a nerve transplant, but axis cylinders grow down only from the central end. An autogenous nerve transplant, of smaller size than the nerve into which it is planted, is capable of hypertrophy. Axis cylinders, judged by Tinel's sign, grow at the average rate of 2 mm. per diem. Perineural scar tissue constricting young axis cylinders is the most important factor in hindering recovery.

Unusual Type of Fracture Dislocation of Upper End of Humerus.—Davies' case was one of subcoracoid dislocation of the head of the humerus, together with a spiral fracture passing downward and inward from the outer part of the head, ending on the inner aspect of the shaft of the bone just above its center.

British Medical Journal, London

Feb. 1, 1919, **1**, No. 3031

*Bone Grafts. W. I. de C. Wheeler.—p. 119.
*Total Enucleation of Prostate. P. J. Freyer.—p. 121.
*Ureters and Their Orifices in Cases of Gunshot Wounds of Spine. A. Fullerton.—p. 124.
Management of Venereal Diseases in Egypt During War. J. W. Barrett.—p. 125.
*Presence of "Filter Passing" Virus in Certain Diseases. J. R. Bradford, E. F. Bashford and J. A. Wilson.—p. 127.

Some Points About Bone Grafts.—Wheeler's opinions as to the inherent value of the bone graft are, in general, in accord with the views held by others. He believes that the periosteum should be left on the graft, because, although not essential, it is the medium through which new blood vessels enter the graft and the surrounding structures. Furthermore, in removing the periosteum superficial layers of osteoblasts may be sacrificed. A periosteum covered graft is less likely to become absorbed rapidly. As to what type of graft is to be used in certain cases, Wheeler says that in the case of the humerus and femur, long stout inlay grafts give the best results. Sliding grafts should only be employed in simple and fresh cases. But for slightly slower osteogenetic powers, and a real tendency to fracture, the intramedullary peg is effective. This method of bone grafting is satisfactory in the case of the radius and ulna.

Total Enucleation of Prostate.—In the 1,550 cases of total enucleation of the prostate performed by Freyer up to date, the mortality has been 5⅓ per cent., diminishing from 10 per cent. in the first 100 to 3 per cent. in the last 200 cases. Freyer advises early operation, before the vital organs, and particularly the kidneys, become secondarily affected.

Ureters and Their Orifices in Gunshot Wounds of Spine.—Cases with injury at the tenth, eleventh, and twelfth thoracic spinal segments were investigated by Fullerton to ascertain whether any relaxation or paralysis of the ureters or their sphincters is present in complete transverse lesions of the cord in the cervical and dorsal regions, in view of the frequency of "ascending" infection of the kidney. From this study Fullerton concludes that peristalsis of the ureters continues, as evidenced by the rhythmical discharge of urine rendered more visible by indigocarmin. Normal movements of the lips of the ureteral orifice take place, as evidenced by the visible systole and diastole present in all the cases. The tone of the ureterovesical sphincter is maintained and the valve is competent.

In order to avoid the disasters likely to result from the use of the catheter, other methods of treatment (pending the establishment of spontaneous micturition) have been suggested by various surgeons. One is to allow the bladder to distend until overflow takes place through the urethra (paradoxical incontinence). The urine is received into a receptacle placed between the patient's thighs. A second is to endeavor by pressure in the suprapubic region, combined, perhaps, with counterpressure by two fingers in the rectum, to overcome the resistance at the vesical outlet, and so to empty the bladder, partially at least. The important point to consider here is whether such distension or pressure is likely to force urine through the ureterovesical orifices toward the pelvis of the kidney. With this end in view, observations were made by Fullerton which showed that it appears to be safe, from the point of view of forcing the ureterovesical orifices, to attempt to empty the bladder by manual massage or pressure. Regurgitation into the pelvis of the kidney is not favored by any abnormal relaxation of the ureterovesical orifice special to spinal injuries. In fact, increased intravesical pressure, whether produced by urine or by fluid introduced through the urethra, actually tends to increase the efficiency of the valve formed by the oblique course of the lower end of the ureter through the coats of the bladder, provided that the ureteral orifice is not paralyzed or dilated.

Filter Passing Virus in Certain Diseases.—The virus isolated by the authors in trench fever consists of minute coccus-like bodies, grouped in pairs, with the opposing surfaces flattened, and varying in size from 0.3 to 0.5 microns. It is gram-positive and stains readily if the film preparations are washed in ether before the stain is applied. It passes through Berkefeld N and V filters, and also through Massen porcelain filters, and can be cultivated from such filtrates. It resists heating to a temperature of 56 C. for thirty minutes, and it is an anaerobe. This organism has been recovered by culture from the blood in eleven out of fifteen cases of trench fever examined during the pyretic stage, and in three out of eight cases examined when apyretic. It was not found in over forty control cases where blood culture with the same technic was carried out. A similar organism was recovered from four separate supplies of infected louse excreta. It was not found in thirty-one specimens of excreta from batches of clean lice. The culture obtained either from the blood of man, or from louse excreta, when inoculated by scarification into man, produces a mild illness, and the organism can be recovered from the blood by culture during such illness, and also from clean lice fed on the patient during the illness.

The virus isolated in cases of influenza consists of very minute rounded coccus-like bodies, varying from 0.15 to 0.5 microns. It is gram-positive, and passes through Berkefeld N and V filters and Massen porcelain filters. It is an anaerobe, and resists heating to 56 C. for thirty minutes. It has been isolated by culture from the blood in six out of nine cases examined, from the sputum in six out of six examined, from pleural fluid in four out of four examined, and from the cerebrospinal fluid in the only case so examined. It has also been isolated from the lymph glands post mortem in the only two cases examined. This organism can not only be grown from the blood, and from exudates, but it can also be seen in stained films prepared from exudates—for example, sputum, pleural fluid, cerebrospinal fluid. The culture (second generation), when inoculated into animals subdurally or intravenously, produces illness in guinea-pigs and monkeys. Passage experiments done from such animals when slightly ill, by injecting their blood, bile, etc., into healthy animals, causes in these more severe and even fatal illness, and postmortem the same lesions are found. The organism has been recovered by culture from the tissues of such experimental animals.

The virus isolated in cases of nephritis characterized by the presence of pyrexia and hematuria at the onset consists of a round coccus-like body varying from 0.3 to 0.6 microns in size, and in culture, often occurring in the form of short chains of four individuals. The same organism may be seen in urinary sediments either singly or in pairs. It is gram-positive, and passes through Berkefeld N and V filters, and also through the Massen porcelain filter. It is an anaerobe, and resists heating to 56 C. for thirty minutes. It has been isolated from the blood in six out of nine cases examined, and from the urine in seven cases. The culture (second generation) when inoculated into animals, produces nephritis in monkeys and guinea-pigs. In severe cases pulmonary lesions are also present. An organism allied apparently to that of polyneuritis has been isolated from brain tissue in cases of encephalitis lethargica.

China National Medical Journal, Shanghai

December, 1918, **4**, No. 4

Influenza Epidemic in Peking. E. T. Hsieh.—p. 129.
North Manchurian Plague Prevention Service. W. Lien-teh.—p. 132.
Report on Hookworm Infection, Pinghsiang Colliery, Hunan. F. C. Yen.—p. 140.
Chinese Preserved Eggs—Pidan. K. Blunt and C. Wang.—p. 145.
Dislocation of Spine. K. Woo.—p. 155.
Sugar in Treatment of Wounds. G. G. Davitt.—p. 157.
Wassermann Reaction. C. E. Lim.—p. 161.
Chapters in Chinese Surgery. J. Dudgeon.—p. 166.

Indian Medical Gazette, Calcutta

January, 1919, **54**, No. 1

Civil Surgeon "On Tour" in Upper Burma. J. Entrican.—p. 1.
Analysis of 1,200 Consecutive Abdominal Operations Performed for Gynecologic Disease on Burmese Females. C. C. S. Barry.—p. 5.
Influenza Pandemic. R. N. O. Moynan and L. D. C. Menses.—p. 14.
Treatment of Panophthalmitis. A. J. E. Lister.—p. 17.
Divided Stretcher. C. G. Taylor.—p. 19.
Circumcision. W. D. Sutherland.—p. 20.

Lancet, London

Feb. 1, 1919, **1**, No. 4979

Plea for Medical Unanimity and Public Spirit. H. Morris.—p. 166.
*Significance of Inverted "T" in First Lead of Cardiogram. I. Harris. —p. 168.
Presence of Filter-Passing Virus in Certain Diseases. J. R. Bradford. —p. 169.
Suspension Treatment of Fractures of Thigh. W. H. Johnston.—p. 170.
*Case of Ectopic Gestation. B. T. Rose and E. H. Shaw.—p. 175.
*Eradication of Latent Sepsis Preparatory to Bone Transplantation in Nonunion of Gunshot Fractures of Limbs. H. Platt.—p. 175.
Some Advances in Polygraphic Technic. H. L. Flint.—p. 176.
Repair of Male Urethra. E. D. Telford and F. G. Norbury.—p. 177.

Inverted "T" in First Lead of Cardiogram.—An electrocardiogram taken from those patients who complained of dyspnea on exertion, fainting fits, edema, without showing any obvious causes accounting for the symptoms, showed the T in Lead I inverted in all these cases. All those patients who showed an inversion of T in the first lead have invariably shown one or more symptoms usually associated with defective heart action. The conclusion reached by Harris is that an inverted T in the first lead is a reliable sign of a damaged heart muscle.

Ectopic Gestation.—The case cited by Rose and Shaw is an example of a very early rupture—six weeks' pregnancy only—of the rarest of all types of ectopic pregnancy—viz., that in the interstitial part of the tube.

Two Stage Bone Grafting Operation.—Such a procedure is urged by Platt. The first operation is at once an attempt at wound sterilization, a provocative measure, and a reconstruction of the bed for the future graft. The bone transplantation is performed in from six to eight weeks after the uncomplicated healing of the first stage operation.

Practitioner, London

February, 1919, **102**, No. 2 (Part 2)

Influenza as Affecting the Respiratory System. H. Mackenzie.—p. 53.
*Influenza and Vaccines. W. D. Emery.—p. 64.
*Treatment of Influenzal Bronchopneumonia: Vaccine Therapy. W. H. Wynn.—p. 77.
Nervous System in Influenza. W. Harris.—p. 59.

Influenza and Vaccines.—Emery reviews the bacteriology of influenza and the use of vaccines. He believes that the position of affairs at the present day is most unsatisfactory. Really but little more is known now than at the time of previous epidemics, when the disease was attributed to an "influence" from the heavenly bodies and named accordingly.

Influenzal Bronchopneumonia: Vaccine Therapy.—Wynn's experience leads him to believe that prompt treatment with vaccines (pneumococci, streptococci, influenza bacilli), within a few hours of the onset will definitely abort an attack of influenza. In the cases in which bronchopneumonia is present from the first, vaccine seems often to have the same good effect when it is injected early. The striking feature with the use of vaccines, as noted by Wynn, has been the almost constant fall in temperature following the injection. He says that the earlier the injection is made, the more likely is the fall to be final. In cases injected after the second day, more than one injection is usually required before the temperature finally settles. Occasionally, the first dose fails to cause a drop in the temperature, and a second larger dose is required to bring this about. If the fall of temperature occurred alone, or was followed by collapse or other bad signs, it would not be desirable, but the fall is associated with improvement in the aspect and in the pulse and respiration rate, which, in Wynn's opinion, indicate that it is due to a definite immunizing influence. The important points for successful treatment are to give an adequate dose as early as possible after the onset of symptoms. Inadequate dosage and delay will cause disappointment.

Archives des Maladies de l'App. Digestif, Paris

January, 1919, **10**, No. 1

*Diagnosis of Syphilitic Tumors in Digestive Tract. L. Bard.—p. 1.
*Technic for Examination. M. Labbé.—p. 12.
Dyspeptic Conditions from Aerial Shock. Loeper and Wagner.—p. 29.
*The Bile-Pancreatic Juice Reflux with Duodenal Ulcer. C. B. Udaondo —p. 38.
Gastric Hypersecretion with Normal Functioning. Maingot and J. C. Roux.—p. 43.

Diagnosis of Syphilitic Tumors in Stomach and Intestine.—Bard does not agree with Fournier and others who deny that it is possible to differentiate a syphilitic tumor from other tumors in stomach and bowel. It has been his experience that in certain cases of smooth, regularly shaped tumors, extremely movable, not tender, growing very slowly and inducing local stenosis but without notable impairment of the general health, a history of syphilis can be generally elicited, and the tumor retrogresses under specific treatment unless it is of tuberculous origin. In the latter event, the delay for trial of specific treatment does no harm.

Technic for Examination in Disease of Digestive Tract.—Labbé outlines the system he follows in examining a patient who complains of stomach or bowel disturbance.

The Reflux of Bile with Duodenal Ulcer.—Udaondo has been studying the connection between the localization of the ulceration and the reflux into the stomach of the duodenal juices, the bile and pancreatic juice. The green discoloration or the tryptic ferment in the contents of the fasting stomach was found in 84.5 per cent of his 13 cases of ulcer in the first part of the duodenum; only in 22 per cent. with ulcer in the second part. In 32 cases of ulcer in the stomach remote from the pylorus, there was no duodenal reflux in 87.5 per cent., as also in 88.8 per cent. of 27 cases of ulcer on or near the pylorus. With induced reflux (Volhard's procedure) trypsin tests were positive in 81.8 and 87.5 per cent. of the cases of ulcer in the first and second parts of the duodenum, but only in 8.3 per cent. of the juxtapyloric ulcer cases. Lesions remote from the pylorus gave 33.3 per cent. positive responses.

Bulletin de l'Académie de Médecine, Paris

Jan 7, 1919, **81**, No. 1

Colloidal Metals Plus Serotherapy in Treatment of Bronchopneumonia and Purulent Pleurisy. J. Parisot and J. Lecaplain.—p. 34.
*Gangrene from Arteritis After Influenza. Molina and Others.—p. 37.
Guaiacol Cacodylate in Influenza. F. Barbary and E. Hamaide.—p. 39.

Jan. 14, 1919, **81**, No. 2

*Polyvalent Vaccine Therapy of Influenza. F. Bezançon and R. Legroux. —p. 44.
*Daily Hygiene of the Mouth. P. Robin.—p. 49.
Microbiology of Influenza. Meunier.—p. 51.
*Healed Fracture of Jaw in Prehistoric Skull. M. Baudouin.—p. 52.

Postinfluenzal Gangrene.—Molina relates that a robust young woman, at the fifth month of pregnancy, was convalescing from a moderately severe influenza of the pulmonary form, when gangrene developed in the right leg, with delirium. The pain on palpation did not extend above the popliteal space and the leg was amputated at the middle third. The woman left the hospital, cured, in a week, the pregnancy apparently undisturbed. The femoral artery was found thrombosed at the point of amputation, showing that the pain on palpation and the thrombosis do not always coincide.

Polyvalent Vaccine Therapy.—Bezançon and Legroux report experiences which amply demonstrate the harmlessness of the polyvalent vaccine they have been using. It contains in 1 c.c. 4 millions pneumococci to 2 millions each of streptococci, Pfeiffer's bacillus and *Micrococcus aureus.* It seems best to inject the vaccine daily, about 0.25 c.c. at a time at first, increasing the dose to 1 c.c. In this way they injected up to a total of 13 c.c. In one group of sixty repatriated prisoners with influenza given this treatment, the mortality was 8 per cent, while it was 17.8 per cent. among the group of twenty-five not given this treatment.

Hygiene of the Mouth.—Robin emphasizes that in disease and in times of epidemics the virulence of the microbes in the mouth is presumably enhanced, and hence the toilet of the mouth becomes exceptionally important. The benefit from the cleansing of the teeth and gums and the daily hygiene of the mouth three times a day is mechanical. Dentifrices, etc., destroy the living cells more readily than they destroy microbes, predisposing the tissues to infections of all kinds, and they had better be abandoned. During epidemics, frequent gargling and rinsing out the mouth with very hot Ringer's solution is advisable for both the sick and well.

Prehistoric Skulls.—See Paris Letter, page 587.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 15, 1918, **42**, No. 32

*Hyperesthesia of Thyroid with Exophthalmic Goiter. C. Lian.—p. 1041.
Serum Diagnosis of Hemorrhagic Spirochetosis. Denéchau.—p. 1047.
*Suture of Severed Spinal Cord. H. Claude and J. Lhermitte.—p. 1051.
*Tardy Chancres. L. Bory.—p. 1057.
Primary Lesion in Leprosy. L. Bory.—p. 1060.
*Brachial Paralysis from Cervical Rheumatism. A. Léri.—p. 1061.
Periscapular Amyotrophy. A. Léri and Perpère.—p. 1065.
Hexamethylenamin and Methylene Blue in Influenza. Loeper and Grosdidier.—p. 1067.
Camphorated Oil by the Vein in Treatment of Influenza. Loeper and Fumouze.—p. 1070.
Hexamethylenamin by the Vein in Serofibrinous Pleurisy. Loeper and Grosdidier.—p. 1073.
Factitious Jaundice Kept Up for Two Years. C. Aubertin.—p. 1075.
Influenza in Troops. A. Rouquier.—p. 1078.

Pain in Thyroid from Contact as Sign of Incipient Exophthalmic Goiter.—Summarized page 527, Feb. 15, 1919.

Suture of Spinal Cord.—Claude says that the young man survived for eight months after the meningo myelorrhaphy. Necropsy confirmed that the cord had been completely severed at the tenth dorsal segment. The case reaffirms the folly of attempting myelorrhaphy, either early or late. Far from beneficial, it always entails complications of different kinds.

Tardy Chancres.—Bory reports a case in which prompt treatment arrested the primary chancre. Three years later it began again where it had left off, and then ran its typical course with roseola. In another case the secondary phenomena were retarded for eight months.

Brachial Paralysis from Cervical Rheumatism.—Léri's patients in this group presented amyotrophic paralysis of the left superior brachial plexus, and radiography revealed lesions of chronic rheumatism in the form of osteophytic protuberances and hooks in the left fourth or fifth cervical vertebrae, just at the emerging point of the fifth cervical root. In others the sixth or seventh vertebra showed the parrot beak projection causing the trouble. In some cases a supernumerary cervical rib was involved. He has encountered eight cases of this kind within a short time. There was nothing to call attention to the neck, the discovery of the bone lesions was casual but they were unquestionably the cause of the periscapular amyotrophy.

Journal de Radiologie et d'Electrologie, Paris

December, 1918, **3**, No. 3

Precision in Radiography. A. Lumière.—p. 97.
Severe Roentgen Burn of Shoulder. Chaillous and Laquerrière.—p. 103.
Technic for Radium Treatment. A. Laborde.—p. 106.
Report from Military Radiologic Service.—p. 113.
Polydactylia. R. Ledoux-Lebard and Others.—pp. 129-130.
Paralysis of Vastus Internus with Ulnar Paralysis. P. Charpy.—p. 131.
New Apparatus.—p. 132 to 136.

Paris Médical, Paris

Dec. 28, 1918, **8**, No. 52

Tardy Narcolepsy After Concussion of Brain. J. Lhermitte.—p. 509.
*Surgical Treatment of Loose Joints. Genevet.—p. 513.
Primary Suture of War Wounds During Offensive Movement. P. Bertein.—p. 518.
*Sugar Test in Diagnosis of Meningitis. J. Pignot.—p. 521.
*Influenza and Spirocheturia. Maclaud and Others.—p. 522.

Loose Joints.—Genevet presents evidence to prove that total resection of the elbow joint with proper treatment afterward will guarantee good functioning later. Even if a flail joint should result, this can be corrected by intervention at any time, as he describes, with illustrations of an old case. He advises total resection for all gunshot wounds of the elbow except when the bullet has merely traversed the joint, or the joint still contains projectiles; also for all grave suppurative lesions of the elbow in which ankylosis in a good position represents the best outcome to be otherwise anticipated. The statistics on record of resection of the elbow are very unfavorable, but investigation of the circumstances shows that the aftertreatment had been left to inexperienced hands in the unfavorable cases. In his nineteen cases of resection of the elbow, followed to date, most of them tardy interventions, all have healed with a neoarthrosis with good functioning in flexion and extension. In nearly every instance the excursions are complete, and they never have been less than 90 degrees, that is, a right angle. He relies on suspension with wire, fastening the stumps loosely together with wire. The joint is exercised at the earliest possible moment, as soon as the inflammation or pain has subsided. The ends of the wire loosely uniting the humerus and the ulna are twisted together for a certain number of turns, and then a rubber drain is slipped over the twist to isolate the wire from the tissues. Between the twenty-fifth and the thirtieth day he untwists the ends of the wire, cuts one end and pulls out the rest of the wire by the other end. No anesthetic is required. With the wire passed through the stumps they can be pulled up into a good position and held there, although there may be quite a gap between the stumps.

Sugar Content of Cerebrospinal Fluid.—Since Pignot first called attention to the diagnostic importance of the sugar content of the cerebrospinal fluid, experience has confirmed its value more and more. The sugar content shows no change from normal with meningeal symptoms, an aseptic and limpid fluid. The sugar disappears from the fluid with actual meningitis, and its progressive reappearance in acute nontuberculous meningitis is a sign of recovery. In case of a relapse, the sugar disappears anew, but returns as the critical phase passes over. The sugar content keeps normal also when serotoxic phenomena simulate a relapse. A reliable quantitative test for the sugar content is thus extremely important, and he says that this is realized by supplementing the Fehling test with a color test. The Fehling precipitate is treated with a 10 per cent. solution of ammonia molybdate. An intense blue tint develops proportional to the amount of the sugar present, even in the minutest quantities.

Spirocheturia in Influenza.—Maclaud reports the finding of spirochetes in the urine of thirty-eight among sixty-one soldiers with influenza.

Presse Médicale, Paris

Jan. 16, 1919, **27**, No. 3

*The Blood Groups. G. Giraud.—p. 21.
*Influenzal Purulent Pleurisy. L. Legendre.—p. 22.
*Lumbar Painful Point in Appendicitis. G. Bruu.—p. 23.

Classification of Blood for Transfusion.—Giraud summarizes the research of Moss in this line, and reaffirms the importance of selecting blood for transfusion which harmonizes with the recipient's blood, that is, in which agglutination does not occur. All that is necessary to avoid is the agglutination of the donor's red corpuscles by the patient's serum.

Influenzal Purulent Pleurisy.—Legendre says that 34 per cent. died of twenty-three men with purulent pleurisy in the course of influenza. Analysis of the fatal cases teaches the necessity for postponing the operation until the lungs have returned more or less to normal. The effusion can be tapped and cleared out by intrapleural injections of specific serum until the lungs are in a condition to stand an operation on the thorax. Before this, intervention invites disaster.

Lumbar Painful Point with Appendicitis.—Brun has had a number of cases of acute appendicitis in which the pains and contracture were more pronounced in the inferior lumbar region than in front. The appendicitis was retrocecal in these cases. This form is more common in children than in adults. The painful point in the lumbar region should be sought with care in conditions suggesting appendicitis, especially when there is not much to be noted in front. He has found this painful point in 30 per cent. of his cases. It is located above the middle portion of the right iliac crest. The maximum intensity is in the outer angle of the triangle of Petit. There may be contraction of the muscles of the posterior wall, and comparison with the left, sound side is instructive. These findings not only reveal appendicitis which might otherwise escape recognition, owing to the negative findings in the iliac fossa, but they also guide the surgeon to the most convenient mode of access to the appendix.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 11, 1919, **49**, No. 2

*War Neuropathology. E. Landau.—p. 33.
Duodenal Diverticulum in Man of 48. H. Siegrist.—p. 47.

War Neurology.—Landau reviews his experience during two and a half years' service in war hospitals in France to which neurologic cases were referred. He thus examined 8,000 neurologic cases, and among the points which impressed him was the instructive reflex to be elicited by tapping the side of the head of the radius. He calls the reflex thus induced the superior radiopronator. By testing for the Babinski sign fifteen or twenty men in succession, the variations in it with different pathologic conditions have convinced him that it is not a reflex in the ordinary sense of the term, but a phenomenon which no theory yet advanced will explain. With cases of neurosis, hysteria and psychoneuroses, he was very successful with his method of treatment which he calls psychic isolation. The first essential is that the physician must appear to the patient invariably exceptionally kind and sympathetic. But the examination is done in the presence of his friends and mates, and the findings are explained in scientific form but so all can understand. Textbooks may be passed around the circle—all to demonstrate that there are reasons for doubting the organic character of the affection. When possible, a patient with an actual organic affection of the kind is demonstrated at the same time, and the points of difference are emphasized. By this means, in two or three sittings, the man with merely a psychoneurosis becomes "psychically isolated" as his friends and mates feel that he is not a subject for sympathy and commiseration, and they thus become unconscious allies of the physician. Their criticism and ridicule soon bring the patient to a normal point of view, and he is cured. Paralysis, deafness, mutism, blindness, contractures and causalgia thus vanished in a few hours or days, like dew before the sun. Epidemics of hysteria befell the hospitals at times, and these were conquered in much the same way. A series of popular lectures was organized, the first on venereal diseases, the second on alcohol, and the third on psychoneuroses, emphasizing the differential points between actual mental upset after contusions and the phenomena of psychoneuroses. Men with the former are generally morose and silent, never noisy and turbulent. Actual cases were demonstrated, and then the lecturer, without dwelling too long on this, turned to another subject. In a few days noisy hysteria had disappeared from all the hospitals in Landau's jurisdiction.

Annali d'Igiene, Rome

Nov. 30, 1918, **28**, No. 11

*Scission of Neutral Salts in the Body. A. Scala.—p. 605.
*The Prevailing Febrile Pandemic. A. Lanfranchi.—p. 620.
*Epidemic Pruriginous Eruption. G. Sampietro.—p. 624.

Cleavage of Neutral Salts in Contact with Colloids.—Scala's research at the Istituto d'Igiene of the University of Rome has demonstrated that sodium chlorid and sodium sulphate and phosphate in contact with animal and vegetable colloids form compounds from which hydrochloric or sulphuric acid dissolve out in relatively large amounts. The first two thus entail an acid condition; the compounds with the phosphate entail an alkaline condition. In normal conditions, a balance is maintained, but otherwise acidity or alkalinity may come to predominate. The resulting disturbances form two great groups, one including pellagra, the other diabetes. He explains that improper diet or instability of the nervous system is the cause of the primary metabolic disturbance responsible for the upset.

Influenza.—Lanfranchi reviews the epidemics of influenza in recent decades in connection with epizootics in horses and other domestic animals.

Epidemic of Itching Eruption.—Sampietro compares reports from Spain with experiences in Italy showing the existence of a contagious itching eruption. Fal and Pineda encountered it at a few points in Andalusia and called it *prurigine epidemica microbica,* but in Italy it goes by the name of *rogna americana.* It affects the more sensitive areas of the covered skin, and is sometimes accompanied by fever, but the evolution is benign. A diplococcus is found in the depths of the papules. There is no evidence to incriminate an acaris.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 3, 7, 10, 1918, **39**, No. 88, 89, 90

Epidemic Influenza. A. Grieco.—p. 759.

Nov. 14, 17, 21, 1918, **39**, No. 91, 92, 93

War Wounds of the Skull. E. Greggio.—p. 765.

Rivista Critica di Clinica Medica, Florence

Nov. 16, 1918, **19**, No. 46

Smallpox in Italian Districts. V. Fedi.—p. 541.

Archivos Españoles de Pediatria, Madrid

November, 1918, **2**, No. 13

*Influenza in Children. C. S. de los Terreros.—p. 641. To be continued.
*Ether by the Rectum for Children. A. Hinojar.—p. 657.

Influenza in Children.—De los Terreros was impressed with the small number of children affected with influenza in comparison with adults, and the lesser gravity of the disease in children. In all, the constant symptoms were supra-orbital neuralgia, the prostration during the acute phase and the depression during convalescence. In one child of 3 the very high fever subsided in three days and the child seemed recovering when it developed somnolency for two days. It could be shaken awake but dropped back into the stupor immediately—suggesting the so-called lethargic encephalitis. Epistaxis was common and seemed to be a favorable sign, never having been noted in the graver cases. He had one case in a 2 year old who had a convulsion and then extremely high fever but no other symptoms till death in scarcely more than twenty-four hours. The incubation period seemed to be about forty-eight hours. Among the sequels of influenza, the rapid development of pulmonary tuberculosis was the most serious. He has encountered quite a number of such cases among older children. A few children developed nephritis after the influenza; he ascribes this to injury from elimination of the disease toxins through the kidneys.

Ether-Oil Anesthesia by the Rectum.—Hinojar has now a record of 160 operations on the ear, nose or throat of children from 1 to 12 years old, under ether anesthesia by the rectum. This experience has convinced him that this procedure is absolutely harmless for children, while for adults serious by-effects are comparatively common. Children are certainly less susceptible than adults to the possible actions of ether, either from absorption or by reflex action from the intestines. If the ether is eliminated by the lungs too rapidly, respiration can be hindered and thus the action of the anesthetic prolonged, or a few whiffs of chloroform can be given in addition. There is no phase of excitement with ether given by the rectum, but there may be a tendency to vomit and hence the stomach should be empty when the child comes to the table. Vomiting with the ether alone does not occur till tardily, usually the next day. He gave 50 gm. each of ether and oil to children under 3; above this age he increased the proportion of ether, 65 to 55 of oil, for children from 3 to 5; 80 to 65 of oil from 5 to 8, and, from 8 to 12, 90 gm. of ether to 75 gm. of oil, but he did not hesitate to increase these doses at need as experience confirmed the tolerance of the children. With adults, on the other hand, he had three fatalities; these patients all had cancer of the larynx or tongue and one had chronic colitis besides.

Cronica Medico-Quirurgica, Havana

October, 1918, **44**, No. 10

Scientific Pan-Americanism. F. M. Fernández.—p. 535.
Transformation in Medical Practice from Progress in Science. J. Santos Fernández.—p. 543.
Trigger Finger. A. B. Judson.—p. 548.
Some Medical Aspects of the War. F. M. Fernández.—p. 551.

November, 1918, **44**, No. 11

Scientific Americanism. J. E. Lopez Silvero.—p. 583.
Intradural Tumor of Optic Nerve. M. Cohen.—p. 584.
Impressions of Recent Trip to the United States. J. S. Fernández.—p. 587.
Rural Hygiene. F. F. Oliva.—p. 599.
Medical Journals of Cuba. F. M. Fernández.—p. 604.

Gaceta Medica de Caracas

Dec. 15, 1918, **25**, No. 23

*Inherited Malaria. E. Tejera T.—p. 244.
Oxytocic Action of Quinin. J. de D. V. Ruiz.—p. 245.
Influenza. J. R. Carcaño.—p. 246.

Inherited Malaria.—Tejera examined under the microscope the blood of newly born infants in his district, where malaria is endemic. The blood from a finger, drawn a few minutes after birth, revealed the *Plasmodium vivax* in one child and the *falciparum* in another. In these two cases the women had been under treatment for florid malaria for a short time before delivery. No quinin was given in one case as the family feared it might bring on a miscarriage. In the other an abortion at the fourth month was under way. The falciparum was cultivated from the blood and also from the spleen and liver of the fetus. In the first case the blood in the child was examined at the twelfth, twenty-fourth, seventy-second and ninety-fifth hours, with positive findings each time. At the forty-eighth and ninety-fifth hours the child's temperature had run up to 39 C. paralleling a febrile paroxysm in the mother. Two further parallel febrile attacks were seen in the child and the mother, but then quinin treatment was begun and pushed and the clinical picture was soon modified. Tejera cites some recent writers to the effect that only three authentic cases of inherited malaria are on record.

Medicina Ibera, Madrid

Nov. 23, 1918, **5**, No. 55

*Some Contraindications for Heliotherapy. A. Sierra.—p. 183.
*Treatment of Influenza. A. S. Alvarez.—p. 183.
Atypical Chancres. Sicilia.—p. 185.

Nov. 30, 1918, **5**, No. 56

*Influenza. R. Velasco.—p. 209.
*Metastatic Gonorrheal Conjunctivitis. B. Carreras.—p. 210.
Influenzal Bronchopneumonia. A. Piga.—p. 214. Com'd in No. 55, p. 186.

Contraindications for Heliotherapy.—Sierra states that while in the majority of cases of surgical tuberculosis marked benefit is realized from partial or total sunbaths, in certain cases the lesions seem to be whipped up to greater activity. This latter group includes the febrile cases. Extreme caution is indispensable when there is fever of even tenths of a Centigrade degree. If the temperature is half a degree or more above normal, sunbaths will aggravate the condition, and hence heliotherapy is contraindicated in these circumstances. Bone or joint tuberculosis is benefited more by sunbaths than pulmonary tuberculosis. Another contraindication is a tendency to hemophilia and hemoptysis. The sunbaths are liable to bring on hemorrhages difficult to control. Heart disease and valvular lesions, no matter how perfect the compensation, likewise contraindicate heliotherapy. Precordial anguish, palpitations and syncope are liable to be brought on by somewhat prolonged sunbaths. Sierra urges to exclude from heliotherapy nervous patients; congestions and general excitement are liable to follow heliotherapy. He warns further that albuminuria likewise contraindicates it, as the edema may spread and fatal uremia may develop; hence the necessity for analysis of the urine before applying heliotherapy. In conclusion he warns against sunbath treatment for the much debilitated, especially children, for those exhausted by long suppuration, and cachexia. He gives only these general principles without citing any specific instances.

Iodin Treatment of Influenza.—Alvarez gives iodin internally and sodium sulphate in enemas, and extols the efficacy of this combination in treatment of influenza. He gives 5 drops of tincture of iodin every three hours, from the beginning of the disease. He says it has a bactericidal action, neutralizing, tonic, antitoxic and immunizing action, regulating the temperature, cell functioning and circulation, while reducing congestions. The best vehicle for it seems to be milk alone or coffee. Scientific theory and clinical experience confirm the benefit of this treatment. In prevention, he orders as the minimum dose for an adult 15 drops every eight hours. He cites other writers who laud the use of iodin internally, and he does not hesitate to call it a fundamental treatment for all infections. (The tincture of iodin of the Spanish Pharmacopeia is of 10 per cent. strength.)

Influenza.—Velasco in this second article emphasizes the marked tendency to hemorrhage in some of his cases of influenza. One robust young priest had a hemorrhage from the lungs of about 350 gm. of pure blood the fourth day and died eighteen hours later. He was impressed further with the absence of high temperatures even in the gravest cases.

Metastatic Gonorrheal Conjunctivitis.—Carreras remarks that metastatic conjunctivitis may be a manifestation of gonorrhea which has apparently subsided completely. In one case of gonorrhea, one knee developed arthritis and one eye showed a metastatic affection of the conjunctiva and cornea with iridocyclitis — an actual segmentitis, but complete recovery followed. From one to four weeks is the usual duration of metastatic gonorrheal conjunctivitis. In Carreras' case recovery was complete within thirteen days, but the joint lesions long persisted. In addition to the usual simple measures for treatment of the eyes, vaccine therapy was applied. The cornea in these metastatic cases is rarely affected; he knows of only one case with rapid and complete destruction of the cornea. But iridociliary lesions frequently complicate metastatic conjunctivitis.

Progresos de la Clinica, Madrid

December, 1918, **6**, No. 72

Electrocardiography. L. Calandre.—p. 329.
Eclampsia and Albuminuria. V. Aza.—p. 342.
Operative Indications in Cholelithiasis. J. P. R. Crespo.—p. 345.
Revision of Conception of Influenza. A. S. de Val.—p. 355.
Principles of Refraction in the Eye. S. Lence.—p. 364.
Workmen's Compensation in Spain. A. Oller.—p. 372.

Revista Ibero-Americana, Madrid

December, 1918, **40**, No. 172

Palography. M. Gil Casares.—p. 401.
Degeneration and Atavism. E. Vilches y Gomez.—p. 415.
Ulcer of the Cornea. G. Leoz y Ortin.—p. 431.

Revista de Medicina y Cirugia Practicas, Madrid

Nov. 28 to Dec. 28, 1918, **121**, Nos. 1532 to 1536

Medical Aphorisms. S. V. De Castro.—p. 225.
Value of Sodium Hypochlorite in Surgery. J. E. Dale.—p. 232.
Influenza. D. A. Ayala.—p. 257. J. G. Arista.—p. 321. J. M. Baltar. p. 353.
*Volvulus of Sigmoid Flexure. J. Blanc Fortacin.—p. 289.

Volvulus of Left Colonic Angle.—Blanc Fortacin's patient was a woman of 40, previously healthy, and the ileus from volvulus of the sigmoid flexure had lasted for four days. Exudation in the peritoneal cavity testified to some infection yet the intestines showed no signs of paralysis outside of the twisted loop, and the general condition was surprisingly good. There was evidently edema in the twisted loop preventing passage of flatus even after the volvulus was reduced. Consequently there was danger of damage with strong peristalsis waves, and to avert this he punctured the cecum to permit escape of gases. By the thirty-sixth hour the normal course of the intestinal contents had been resumed, and recovery was complete at once.

Revista Medica Cubana, Havana

December, 1918, **29**, No. 12

Treatment of Bronchopneumonic Form of Influenza. Aballi.—p. 625.

Revista Medica del Rosario

December, 1918, **8**, No. 6

*Amputation of the Foot. A. Baraldi.—p. 441.
Diaphragmatic Hernia. A. Zeno.—p. 452.
*Tetany and Physiopathic Symptoms. T. Fracassi.—p. 458.
*Cancer of the Uterus. J. B. Abalos.—p. 466.
Surgical Abdominal Lesions. R. Araya.—p. 473.
Bone Grafts. J. B. Abalos.—p. 499.

Amputation of Foot.—Baraldi gives an illustrated description of what he calls the operation of P. Duval. It is the last link in the chain of osteoplastic operations that can be done between the calcaneum and the tibia; it is intermediate between the Pirogoff and the Guyon amputations. No matter how much the foot is crushed, this technic is almost invariably applicable and it leaves the patient with a useful leg. The ventral position is peculiarly advantageous for all plastic operations on foot and leg. The elliptical incision passes from the interline of the tibio-astragalus articulation down to the farthest rear of the sole, 15 or 20 mm. in front of the vertex of the arc formed by the profile of the heel. The posterior aspect of the calcaneum is sawed off perpendicularly, forming a plate about 1 cm. thick, and then the foot is amputated just above the malleoli. The flap cut from the calcaneum is sutured to the stump of the tibia with catgut or with a wire passed around the flap and through the tibia. The wire had to be removed later in one case, and he intends in future to use kangaroo or reindeer tendon as taking longer to be absorbed than catgut. In the case described the foot had been run over by a car wheel but the stump can be used now, a year later, exactly like a normal sole. The man is now fitted with an artificial foot.

Physiopathic Nervous Disturbances.—Fracassi reports a case which he thinks is the first of the kind to be described in Argentina. It resembles in every respect the nervous disturbances after war wounds which Babinski calls reflex nervous disturbances, or physiopathic syndromes. There was no wound, but the man of 34 had been repeatedly severely chilled in working in the fields in the rain, and he developed tetany, with painful spasmodic contracture of the hands and feet exactly like the accoucheur's hand contracture noted after war wounds. It has been ascribed to immobilization, but there had been no immobilization in this case. The microsphygmia, loose joints and other symptoms of Babinski's physiopathic syndrome were all present; the limbs were weak and there was both hypotony and atrophy in certain muscles of arms and legs. In another case the traumatic clubfoot was the result of chronic arsenical poisoning; in others of leprosy, or of extreme fatigue—some of these factors have evidently cooperated in the development of physiopathic disturbances after war wounds. The constant coexistence of hysteria with the physiopathic disturbances sustains the close connection between them, and explains them as the result of blocking of the sympathetic nervous system. This blocking might be overcome by some intense, painful electric stimulation capable of generating powerful counter inhibition, as Tinel has advocated.

Cancer of Uterus.—Abalos has been visiting in Europe and here relates some of his impressions as he journeyed from one surgical service to another. He was impressed with the earlier stage of uterine cancer which European surgeons see in comparison to what occurs in Argentina. Surgeons outside of the great surgical centers are too apt to wait for the diagnosis of cancer to be certain—by the time the malignant nature of the affection is beyond question, the growth is too often inoperable. He cites Pollosson's dictum that operative treatment is required in every case of uterine cancer unless there are formal contraindications. The latter now has a record of over 400 Wertheim operations with 35, 61 and 69 per cent. permanently cured, for three or four years or longer. He emphasizes that the fundamental condition for extensive abdominal operations is the dissecting out of the ureters through their entire course in the pelvis. In his latest series, the actual cures, according to Winter, were 52 per cent.

Semana Medica, Buenos Aires

Oct. 31, 1918, **25**, No. 44

*Thrombosis Simulating Tuberculous Meningitis. M. J. Rizzi.—p. 517.
*Syphilitic Lesions in Uterine Adnexa. C. A. Castaño.—p. 520.
Supernumerary Mammary Glands; Three Cases. C. Lanza.—p. 530.
*Psychology of the Aviator. J. A. Lopez.—p. 532.
Pubiotomy versus Symphysiotomy. T. A. Chamorro.—p. 534. Cont'n.
Plasmogenesis; Technical Points. A. L. Herrera.—p. 538.
Proposed Campaign of Eugenization. G. P. Goñalons.—p. 539.

Nov. 7, 1918, **25**, No. 45

Insufficiency of Left Ventricle. J. Destéfano.—p. 543.
*Tapeworm in Cat. S. E. Parodi.—p. 548.
Garlic in Treatment of Tuberculosis. D. T. R. Davison.—p. 550.
*Tearing Loose of Mesentery with Hernia. A. Gallo.—p. 553.
*Milk-Coagulating Ferment in Ovarian Extract. L. Goldemberg.—p. 554.
*Tuberculosis in Spaniards in Argentina. E. R. Coni.—p. 555.
*Echinococcus Cyst in Liver. C. A. Bambarén.—p. 556.

Nov. 14, 1918, **25**, No. 46

*Chemical Research on Gastric Juice. F. Landolph.—p. 569.
*Prophylaxis of Syphilis. J. A. Raíces.—p. 579.
Chemical Reactions of Phenyldimethylpyrazolon. J. A. Sanchez.—p. 587.
The Mortality from Influenza. E. R. Coni.—p. 591.
Prophylaxis of Juvenile Delinquency. V. Melcior y Farré.—p. 592.

Thrombosis of Lateral Sinus.—Rizzi reports a case which deceptively simulated tuberculous meningitis, in a girl of 11 with a tuberculous mother. When he saw the child first, the thirteenth day, the main symptoms were somnolency although the mind was clear, irregular fever, the back of the neck rigid, the pulse fast, not modified by change of attitude, pain in the mastoid region and over the squamous bone, but no convulsions, no strabismus or anisocoria. His diagnosis of thrombosis of the lateral sinus was confirmed by the operation, not permitted till the fifteenth day, when the child was already in coma. No benefit was realized apparently from the extensive operation, and the child was apparently moribund, when, the fourth day after the operation, he succeeded in discovering a large decomposing parietal thrombus. Removal of this transformed the clinical picture at once, with rapid recovery. Such cases teach the folly of attempting to cure without amply opening up the sinus and carrying the investigation far beyond the apparent confines of the lesion.

Syphilis of the Uterine Adnexa.—Castaño does not hesitate to assert that syphilis is always involved in fibromatous lesions of the uterine adnexa. He has never encountered a fibroma of the kind except in syphilitics, the disease inherited or acquired. The tendency to sclerosis, especially when there are preexisting or concomitant gonorrheal or streptococcus lesions, results in those tubo-ovarian abscesses or bilateral salpingitis which fuse the adnexa into a solid, knobby mass sometimes involving the uterus or bowel or both. This conglomerate can be recognized by palpation. Although it seems to be an extensive inflammatory process, only amenable to a radical operation, yet under combined mercurial and iodid treatment the whole process is liable to retrogress completely, and the patients live the rest of their lives in perfect condition so far as these organs are concerned, free from pain and hemorrhages. Attempts to operate in this class of cases have resulted in the highest mortality of all gynecologic interventions.

In his service he gives systematic treatment for syphilis as an indispensable preliminary to operation in all cases of fibromas. This smoothes the way for the operation in every case and often renders it unnecessary. Very few cases of syphilitic adnexitis have been published, as every one takes it for granted that the whole process is referable to the gonococcus or streptococcus, thus failing to recognize the share of syphilis in the lesion. Examination of the tubes after removal will often show that the lesions are of a gummatous type. In every case the syphilis tends to induce sclerosis and adhesions. This should be borne in mind at all operations in this region as the sclerosis and the adhesions may retrogress under specific treatment and there is no need to break up the adhesions to other organs. Vessels and lymphatics may have developed in them to such an extent that it is dangerous to cut or tear them. In the differential diagnosis it is important to remember that with a fibroma in the uterus its cavity always enlarges. If a catheter shows that the uterus cavity is only 6 or 7 cm. long, the assumption of a fibroma can usually be discarded.

The Psychophysiology of Aviation.—Lopez reviews some of the points that have impressed him in his observation at the military aviation school. He says that every muscle in the body is worked in the process of flying, that is, during equilibration in the air. The muscular movements are gentle, but all the muscles are involved sooner or later in the flight.

Tapeworm in Cat.—Parodi found in a cat nine specimens of the *Dipylidium trinchesci*. It is the first time that this parasite has been recognized at Buenos Aires. Its intermediate host is not known.

Disinsertion of Mesentery with Strangulated Hernia.—Gallo reviews cases of this kind on record and reports a case personally observed. His patient was a married woman of 54. The mesentery of the strangulated loop in the femoral hernia had been torn loose, and it was sutured after 50 cm. of the loop had been resected.

Ferment in Ovarian Extract That Coagulates Milk.—Goldemberg describes experiments which demonstrated in ovarian extract a proferment that, when activated with calcium chlorid, coagulates milk.

Tuberculosis in Spaniards in Argentina.—Coni has brought down to date his statistics in regard to the racial prevalence of tuberculosis. The figures show a death rate from tuberculosis per ten thousand inhabitants of 28.6 for the Uruguayans in Buenos Aires, while the figures are 17 for the Spaniards, 16 for the Argentines, 10.7 for the Italians and 8 for the Russians.

Perforation of the Stomach After Echinococcus Disease of Liver.—In Bambaren's case the young woman had been operated on twice for echinococcus cysts in the liver. In dressing the wound after the second operation, stomach contents were found in the cyst which had been sutured to the lips of the laparotomy incision. With enteroclysis and Fowler's position, heart tonics and ice to the abdomen, the condition improved and the opening into the stomach seemed to heal spontaneously. There must have been localized peritonitic adhesions enough to wall in the process and prevent serious complications from the perforation. If the operation had been delayed a few days, the cyst might have perforated into the stomach, and its contents passed out this way.

Chemical Research on the Gastric Juice.—Landolph has been analyzing the gastric juice of dogs, and describes the technic with which the chlorin in the three fractions of the distillation can be determined.

Prophylaxis of Syphilis.—Raíces advocates, besides the usual general prophylactic measures, absolute suppression of attempts to regulate prostitution; arrangements for medical treatment of venereal diseases in connection with all state establishments with a considerable number of employees, and intensification of all means for diagnosis and treatment as outpatients or in hospitals. His tabulated statistics show that in the last five years the number of new cases of syphilis ranged from twenty to 100 each month, only two months showing a lower figure than this—seventeen and twelve. He emphasizes that if girls are not enlightened by their mothers, the day comes when Nature enlightens them, and the natural instincts speak louder than the conventions. Nature pushes and does not warn of any dangers.

Siglo Medico, Madrid

Nov. 16, 1918, **65**, No. 3388

Internal Texture of Malaria Plasmodium. F. Muñoz Urra.—p. 937.

Nov. 23, 1918, **65**, No. 3389

*Anesthesia in Hysteria. A. S. Herrero.—p. 959.
*Psychiatry and the War. W. H. R. Rivers.—p. 960.

Nov. 30, 1918, **65**, No. 3390

Fundamental Considerations in Roentgen Therapy. B. N. Canovas. —p. 973.

Anesthesia in Hysteria.—Herrero comments on the well established fact that persons in extreme excitement, profound emotion, may not feel pain from some serious wound. The consciousness does not register the sensation of pain. There is evidently some congestion in the endocosmos which shuts off the innervation of the organic periphery, even in the healthy. This absence of perception (mental vision) is a feature of hypnosis. This action and reaction between the psychic endocosmos, the innervation and the peripheral organism from the Ariadne's thread which leads us out of the maze of hysteria.

Psychiatry and the War.—Rivers remarks that the influence of the war on psychiatry has been enormous. The most important effect has been the closer relations between psychiatry and neurology. Another change has been the greater respect paid to psychanalysis by many who before were hostile to it. The Freud school of psychanalysis have learned that sex is not the sole factor in the production of psychoneuroses but that other instincts, self-preservation, etc., may also intervene in the production of psychoneuroses.

Vida Nueva, Havana

December, 1918, **10**, No. 12

History of Mosquito Transmission of Yellow Fever. C. E. Finlay. —p. 321.
Notes on Influenza. J. C. Pineda.—p. 324.
Roentgen Localization of Projectiles. P. L. Fariñas.—p. 326.
*A Criminologic Diagnosis. I. Castellanos.—p. 330.

Criminologic Diagnosis.—Castellanos discusses a recent crime in which a child of seven was gashed repeatedly by its father who had become absolutely convinced that the blood of the daughter would cure him of rheumatism. This belief had been fostered by the child's stepmother.

Mededeel. v. d. Burg. Geneesk. Dienst, Java

1918, No. 7. Edition in English and Dutch

*Contagious Jaundice with Spirochetes and Symptoms Suggesting Blackwater Fever. W. Schüffner.—p. 1.
*Blackwater Fever. C. D. de Langen.—p. 26.
*Gallstones in the East Indies. C. D. de Langen.—p. 44.

Spirochetes in Blackwater Fever.—Schüffner reports the discovery of spirochetes numerous in the blood of a robust young native of Java who died within two days with symptoms of acute blackwater fever. His photographic reproductions of the microscopic findings show the spirochete without coils. Inoculation of guinea-pigs with the patient's blood was constantly negative, although it was swarming with the parasites. It is possible that young guinea-pigs might prove more susceptible, and he urges that they should be given a trial in such cases as also all other laboratory animals and the larger domestic animals. Perhaps by so doing an intermediate host may be discovered. In two other cases the disproportion between the serious general condition, suggesting severe poisoning, and the objective findings was striking; inoculation of guinea-pigs was also negative and no spirochetes were found in the blood but possibly this was due to inefficient technic. In the case mentioned first, various modifications of the technic had to be tentatively tried before the spirochetes finally showed up. In cases of blackwater fever in future, the blood should be examined at the earliest possible moment and the eyeballs should be examined for evidences of jaundice. The high leukocytosis, pains in the calf and the serious general condition will aid in differentiation.

Blackwater Fever.—De Langen reports his study of nine cases of blackwater fever, including two in Europeans. The resisting power of the red corpuscles seemed to be normal, but the residual nitrogen was exceptionally high even in the cases without anuria. He is convinced that the share of quinin in the origin of blackwater fever has been much overrated. He was never able to find anything resembling the cell enclosures described by Leishman. In treatment, heart tonics and calcium salts were the main reliance and eight of the patients recovered. Quinin was not given except to one patient with tertian malaria. Cholesterol given in the form of egg yolk did not display any benefit. In the last case, intramuscular injection of 15 c.c. of blood serum from a normal person was followed by a drop in the temperature. In two days the defervescence was complete while the hemoglobin disappeared from the urine, and except for the severe anemia the patient seemed perfectly normal. Two months later the patient developed the same set of symptoms anew. Immediately he was injected with serum—this time fresh dysentery serum was used as it happened to be on hand —and the next day the urine was normal once more. These two experiences justify further attempts in this line.

Gallstones in the East Indies.—De Langen states that only from 3 to 11.2 per cent. cholesterol was found in gallstones found in fifteen cadavers. In only one of the cases had the cholelithiasis been suspected during life. There have been only thirty cases of gallstones diagnosed in the last ten years in the government infirmaries among the 422,943 admittances. These figures confirm his previous statements, mentioned recently in these columns, as to the rarity of gallstones in the East Indies, and the exceptionally low cholesterol content of the blood in the natives.

Nederlandsch Tijdschrift v. Geneesk., Amsterdam

Dec. 21, 1918, **2**, No. 25

Research on the Blind Spot. T. Wassenaar.—p. 1952.
*Suprarenal Extracts. W. S. v. Leeuwen and M. v. der Made.—p. 1961.
Intravenous Injection of Silver Salt in Influenzal Pneumonia. M. A. van Andel.—p. 1963.
Syphilitic Hepatitis Mistaken for Gallstones or Nephritis. J. P. J. Hattink.—p. 1965.
Acute, Transient Swelling of Salivary Gland. D. H. Koetser.—p. 1967.
*Agglutination Reaction in Diagnosis of Typhus. U. G. Bijlsma.—p. 1967.

Suprarenal Extracts of Different Origins.—Van Leeuwen's tests showed absolute concordance in the action of several makes of suprarenal preparations, only one, and this a domestic product, differing in its action.

The Agglutinating Test with Proteus Cultures in Typhus. —Bijlsma says that the extensive literature on the Weil-Felix test agglutination in diagnosis of typhus has demonstrated its practical usefulness, although a scientific theoretical explanation is still lacking. The proteus strain in question, the X strain, as they call it, was cultivated from the urine of two patients with typhus. By repeated cultivation of the proteus from typhus urine they finally found one strain, X 19, which is agglutinated by typhus patients' serum even extremely diluted. This strain is the one now commonly used for the tests. Others have cultivated similar strains from both blood and urine; the technic for the test is the same as for any agglutination method. Preparations made with this strain for indefinite conservation, like Ficker's "diagnosticum," are said to have given good results by certain German investigators. The proteus test seems to be specific for typhus. In other diseases the response is negative or it occurs only with high concentration.

Hospitalstidende, Copenhagen

Nov. 13, 1918, **61**, No. 46

Early Microscopic Findings in Lupus of Nasal Mucosa. K. A. Heiberg and O. Strandberg.—p. 1585.
*Intussusception of Stomach. J. Fabricius-Møller.—p. 1592.

Intussusception of the Stomach.—Møller gives an illustrated description of the findings at necropsy of a woman of 66 with acute stenosis of the pylorus from intussusception of the stomach into the pyloric region and incarceration in the duodenum of a large pedunculated papilloma in the stomach. The neoplasm had probably existed for many years but had caused no symptoms until not long before death. He has been able to find only two analogous cases in the literature, one of them Wade's case. All the patients were elderly women with a pedunculated tumor which had not caused symptoms until it slipped into the duodenum. Signs of stenosis of the pylorus are the first to attract attention, either chronic or acute as in Møller's case. Blood in the stools and jaundice may be observed, but the prognosis depends on the promptness of operative relief. In conclusion he refers to Ederlen's case in which the invagination occurred in the much dilated esophagus.

Hygiea, Stockholm

Nov. 30, 1918, **80**, No. 22

*Primary Myxoma in Heart. H. Bergstrand.—p. 1265.

Primary Tumor in Heart.—Bergstrand reports that an unmarried woman of 25 had presented symptoms for a few months suggesting acute endocarditis. It had been preceded by a few months of occasional paroxysmal tachycardia. Necropsy revealed a myxoma 4 cm. in diameter. The pathology is discussed and compared with literature on primary tumors in the endocardium.

Norsk Magazin for Lægevidenskaben, Christiania

December, 1918, **79**, No. 12

*Traumatic Affections of Brain. F. Harbitz.—p. 1289.
*Temperature Changes with General Paralysis. O. Lie.—p. 1325.
*Purpura. C. Johannessen.—p. 1336. Conc'n.
*Examination of the Heart. M. Solberg.—p. 1371.
*Sarcoma in Iris of Woman. O. Berner.—p. 1373.
Treatment of Infected Wounds. R. Ingebrigtsen.—p. 1381.
*The Abdominal Reflexes. G. H. Monrad-Krohn. Supplement, pp. 1 to 180.

Trauma of the Brain.—Harbitz discusses from the medicolegal standpoint traumatic apoplexy, traumatic neuroses and traumatic pachymeningitis, reporting some typical instances of each with his conclusions as to treatment and the causal connection with the trauma. In some of the cases there was an interval of several months between the accident and the apoplexy, and necropsy revealed old arteriosclerosis or old foci of softening of the brain manifestly antedating the accident. Such a combination imposes scepticism and criticism. Some of the cases illustrate the consequences of trauma in an already pathologic brain, as for example in a case of death a month after a fall on the back of the head. Necropsy showed accumulation of blood between the meninges, but there was evidence of old pachymeningitis. The latter entailed the hemorrhages which proved fatal, but there would probably not have been any hemorrhages from the previously latent pachymeningitis if it had not been for the fall. His seven patients were all elderly except one robust man of 38 who developed rapidly fatal tuberculosis after he had been confined to bed from the consequences of a contusion of the brain. The direct importance of the trauma in this case was unmistakable. His cases demonstrated further that an actual traumatic injury of the brain can be accompanied or followed by a secondary neurasthenia or hysteria.

Temperature Changes in General Paralysis.—Lie is chief of the Dikemark Asylum and he relates that there were thirty-eight deaths from general paralysis there in the last three years, but none from gangrene. In four cases the temperature charts of the last month before death recorded extremely low temperatures. In one case it declined to 26 C. in five days; in another case from 35.5 to 22 C. in twenty-four hours. In another case the decline was more gradual, dropping to 25 in the course of eight days. The temperature was taken in the rectum each time. One of the above thus breaks the record for low temperature in general paralysis, with his 22 C.

Purpura.—The first part of C. Johannessen's article was reviewed in this department, page 318. He here discusses the hemorrhagic purpuras of the idiopathic type with essential thrombopeny, pseudohemophilia. A typical case is described which illustrates the wide divergence of the clinical picture from that with anaphylactoid purpura, analyzed in the preceding instalment: the temperature persistently normal, never any joint or colic pains, and the blood showing lymphocytosis and leukopeny, with from 2,000 to 4,000 blood platelets. The chronic Werlhof's disease in this case was intermittent, but in a second case described the disease was continuous, although milder. The acute form develops like the chronic form but generally terminates fatally in from two to four weeks. He reports a case in a male infant, 2 years old, in which the mother noticed a purpuric patch on the right thigh and left leg; the child seemed normal otherwise. The patches increased in size and number and the next day the child vomited once and there was some blood in the vomit. The child died the third day. Besides these chronic and acute forms of typical Werlhof disease, other diseases may present symptoms resembling those of Werlhof's disease, but examination of the blood may reveal lymphatic leukemia as in a case described in a young child. A toxic symptomatic form has also been observed with chronic poisoning, especially benzol poisoning.

The prognosis is grave for the acute forms but in the chronic cases it depends on the treatment. Oversight of the condition is best realized by frequently repeated count of the blood platelets. The assumption of a myelogenous origin, which he accepts, calls for arsenic treatment. This is said to rouse the bone marrow from its torpor and stimulate production of platelets, but he never witnessed any appreciable benefit under arsenic. Splenectomy has given promising results but it is still in a tentative phase, and the ultimate outcome is unknown as yet. Gelatin by mouth and subcutaneously should be given a trial, to ward off or arrest hemorrhage. Von Velden advocates repeated injection by the vein of 5 or 10 c.c. of a 10 per cent. solution of sodium chlorid. To increase the number of blood platelets is the main thing, and the first and foremost measure for this is direct transfusion of blood. His first case testifies most strikingly to the benefit possible with this; it serves another purpose also in restoring the blood lost in the hemorrhages. Fonio has demonstrated the feasibility of centrifuging out the blood platelets and injecting them alone or an extract of platelets. With hemophilia there is also insufficiency of blood platelets. It usually begins about the age of 2, and at 7 or 8 the joints may show the typical hemophilic lesions, which so often get labeled tuberculosis or syphilis. A history of a hemophilic tendency may be the only clue. In treatment, rest, compression and cold packs, with cautious use of the joints after a few days. Cautious massage promotes absorption. Absolute disuse favors contracture; too forcible measures are liable to cause bleeding in the joints. General strengthening and symptomatic measures are indicated, the same as with Werlhof's disease, with extract of blood platelets in particular.

Examination of the Heart.—Salberg in dubious cases has the patient recline for a few minutes and then stand up. The heart sounds become much more instructive when examined in this way.

Sarcoma of Iris.—Berner states that the sarcoma removed from the lower part of the left iris seemed to resemble those in Wood's and Pusey's cases. There has been no sign of recurrence in the case reported during the two years to date, and vision is 5/10 without glasses.

Abdominal Reflexes.—Monrad-Krohn's monograph is based on examination of 472 cases at various hospitals for nervous and children's diseases at London and Christiania. He gives eleven pages of bibliographic references (titles in full), with a five page summary in English. Among the facts he has ascertained are the increased intensity of the abdominal reflex in paralysis agitans and in chorea, and the attenuation in hysteric hemihypo-esthesia. The normal abdominal reflex is homosegmental, and it may be epigastric, or above, including, or below the umbilicus. There is also the periosteal deep reflex of the costal margin. The abdominal reflexes are so constant in health and give such important information in pathologic conditions, as he describes in detail, that testing this reflex must be regarded as an important link in the chain of routine general and neurologic examination. A heterosegmental abdominal reflex points to partial paralysis of the abdominal musculature without pronounced sensory deficit phenomena. He theorizes that the reflex arc reaches up to the brain, and that it is under the control to a certain extent of that part of the nervous system which is damaged in paralysis agitans and chorea.

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THE OCCURRENCE OF SUPERFETATION *

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From time to time reports of alleged instances of human superfetation appear in current medical literature. Reports of similar instances in other mammals occur also, although more rarely, in the nonmedical literature. As recent instances of the former may be cited the cases reported by Logan[1] and Gustetter.[2] Of instances of the latter may be mentioned the cases of King,[3] Sumner[4] and Harman.[5] The latter group of cases were found in the rat, the mouse, the cat and the cow, respectively.

Without accepting the alleged cases in mammals with bicornate uteri as unequivocal, it is easy to see that aside from ectopic implantations, the conditions under which superfetation necessarily would have to occur in the human uterus may be totally different from those that may obtain in bicornate uteri. Since the usual intermenstrual period in women is twenty-eight days, it would also seem, as often asserted, that the older of two fetuses in a case of human superfetation certainly would occlude the uterine cavity rather effectively, and alone make fertilization of any ovum, liberated at a subsequent ovulation, difficult. It would seem to do this entirely aside from the possible effect of the cervical mucous plug so frequently referred to.

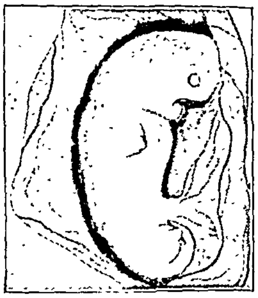

Fig. 1.—Superfetus from the cat, after Harman.

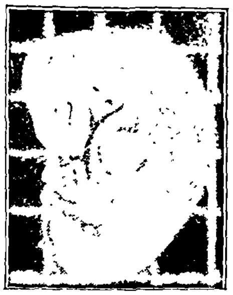

Fig. 2.—Normal cat fetus, approximately 10 mm. long when fresh.

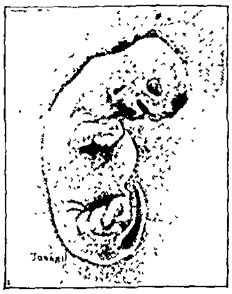

Fig. 3.—Macerated, distorted, normal cat fetus, after Kunz.

These things are true especially in such instances as that of Gustetter's, in which the time interval between the ages of two fetuses is estimated to have been as great as sixty-five days. Moreover, it would seem that the development of the first fetus and that of the corpus luteum in such a case as this would have inhibited the occurrence of subsequent ovulations. An obstacle to the implantation might also be found in the condition of the decidua, even if later ovulation actually occurred. Since Loeb[6] found that in the pregnant guinea-pig the endometrium cannot be stimulated to form a new decidua, it is evident that the fertilized ovum might encounter insuperable difficulties if similar conditions obtained in the human being. However, if a young blastocyst really can become implanted on the bare surface of an ovary, or on the peritoneum, even, then it may well be doubted whether a new decidual reaction is essential for implantation of the ovum in the human being. Furthermore, when implantation in the graafian follicle occurs, there probably is no decidual reaction, at least nothing comparable to what occurs in the uterus, although I presume that a corpus luteum might possibly act vicariously to some extent. However, there are other obstacles, such as those mentioned above, and the possible occlusion of the uterine tubal orifices in consequence of hyperplasia of the musculature.

Although it is being established that ovulation and menstruation apparently are not contemporaneous phenomena, succeeding ovulations nevertheless probably are periodic and separated by a considerable interval of time from each other. Such a conclusion seems to be fully warranted, although it is, of course, well known that ovulation may occur without menstruation in normal nonpregnant women. This, however, does not establish that ovulation occurs during pregnancy also. According to Fraenkel[7] and Miller,[8] ovulation normally precedes menstruation by about nine days. Cosentino,[9] and also a few others, have reported cases of ovulation during pregnancy in women, but we unfortunately know little as to the exact conditions which obtained, so that the entire matter remains as yet rather undecided.

Franco,[10] while reporting a case of spurious superfetation, gave a long list of Italian writers who were

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[1] Logan, J. C.: A Case of Superfetation, J. M. A. Georgia, **7**, 1917.

[2] Gustetter, A. L.: Abortion Due to Superfetation, J. A. M. A. **70**: 20 (Jan. 5) 1918.

[3] King, Helen D.: Some Anomalies in Gestation of the Albino Rat (Mus Norvegicus Albinus), Biol. Bull. **24**, 1913.

[4] Sumner, F. B.: Notes on Superfetation and Deferred Fertilization Among Mice, Biol. Bull. **30**, 1916.

[5] Harman, Mary T.: A Case of Superfetation in the Cat, Anat. Rec. **13**, 1917; A Probable Case of Superfetation in the Cow, ibid., **14**, 1918.

[6] Loeb, L.: The Influence of Pregnancy on the Cyclic Changes in the Uterus, Proc. Am. Physiol. Soc. **25**, 1912-1913.

[7] Fraenkel, L.: Neue Experimente zur Function des Corpus luteum, Arch. f. Gynäk. **91**, 1910.

[8] Miller, J. W.: Die Rückbildung des Corpus luteum, Arch. f. Gynäk. **91**, 1910.

[9] Cosentino: Ovulation während der Schwangerschaft, Zentralbl. f. Gynäk. **21**, 1897.

[10] Franco, T. E.: Ueber vorgetäuschte Superfoetation, Arch. f. Gynäk. **91**, 1910.

said to believe in the occurrence of superfetation. Unfortunately, this literature at present is largely inaccessible to me in the original, and such as is accessible remains unconvincing as all of it apparently was to Cuzzi, who is reported by Franco as regarding superfetation only as a theoretical possibility. Nor does there seem to be good evidence that ovulation occurs during pregnancy in other higher mammals. The only case cited is the questionable one in a cat reported by Christopher.[11] At present it has not even been established that superfetation occurs in the rare cases of double ovarian, or of combined ovarian and uterine pregnancies, although these cases furnish far more favorable conditions. Did the alleged occurrence of superfetation not involve a series of assumptions, each one of which remains unproved, belief in it would seem easier. Consequently, in view of all these things, it would seem that the concluson of Gustetter that superfetation is "a frequent though often overlooked cause" of abortion in women is rather venturesome.

The possibility of superfecundation, however, is not necessarily excluded by these considerations, for ova from the same ovulation still might be fertilized at somewhat different periods by some spermatozoa from the same or from subsequent coituses. But even while theoretically possible, it is evident that the relatively limited period of vitality of the unfertilized ovum, as contrasted with the duration of pregnancy, would make it extremely difficult, if not impossible, to recognize such cases. This would be true even if they occurred in the earlier stages of development, for normal growth differences are too great when contrasted with the greatest differences that could possibly exist under these circumstances. This would seem to be true even if we grant that the spermatozoa have a somewhat more tenacious life than ova. In all instances in which the discrepancy of size or development between two fetuses is such as to suggest that one of them arose from an ovulation so far removed from the other as to produce unusual differences in size in the later months of prenatal development, the assumption of independent action of the ovaries, considered by King in the case of the rat, would not avoid the foregoing difficulties. Nor could the occurrence of deferred fertilization, which is advanced by Sumner as an explanation for the occurrence of supernumerary broods in mice, be used as an explanation in human cases, for the period of vitality of both the ovum and the spermatozoon would seem to be entirely too short to become responsible for marked developmental differences.

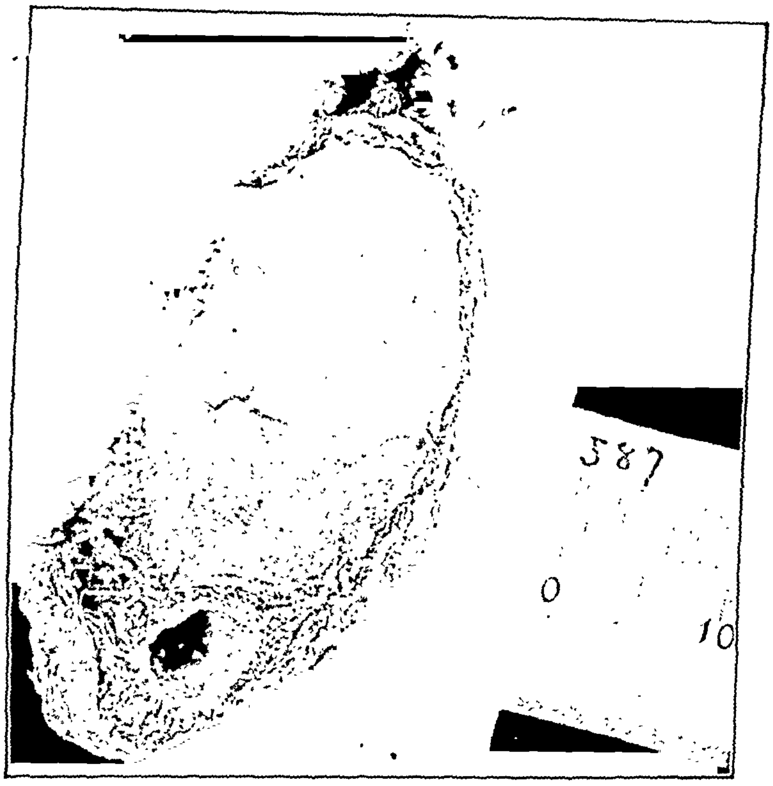

Fig. 4.—A case of pseudosuperfetation, No. 587, from the Mall Embryological Collection; × 2. All fetuses shown in Figures 4 to 12 are twin, as indicated by the numbering.

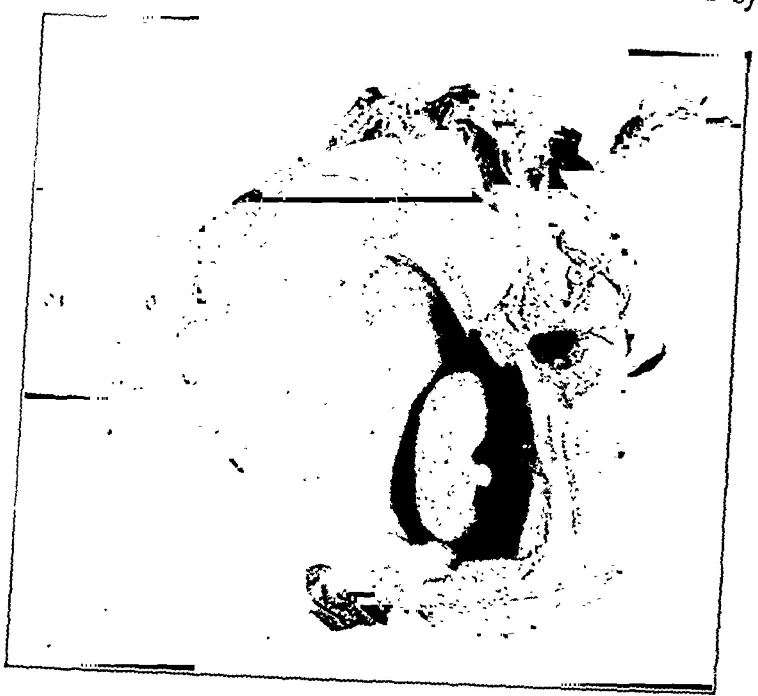

Fig. 5.—Pseudosuperfetus 788 *a* from the Mall Embryological Collection; × 1.

Sumner found supernumerary litters to occur in 3 per cent. of 250 broods in young mice. Such litters were particularly frequent in young deer mice. The frequency of supernumerary broods would seem to vary greatly in closely allied mammals, however, for King observed only two cases, and these she regarded only as "seemingly" instances of superfetation among 700 normal broods in rats. This is an incidence of only 0.28, or a frequency only one-eleventh as great as that found by Sumner in mice. Sumner also stated that more than 80 per cent. of the supernumerary broods survived nearly or quite nearly to maturity, and King added that all of those broods in rats were raised to maturity and that some were used for breeding purposes later.

Although both King and Sumner regarded the occurrence of superfetation with considerable reserve, neither seems to have considered the possibility of delayed parturition in one horn of the uterus as worthy of consideration in connection with supernumerary broods between which the time interval was short. Whenever this interval was relatively long as contrasted with the gestation period, such a suggestion is untenable, to be sure, unless corresponding developmental differences were present. It might be helpful as well as interesting to have a careful gross and microscopic examination of the broods concerned in order to contrast the respective states of development.

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[11] Christopher, W. S.: Ovulation During Pregnancy, Am. J. Obst. **19,** 1886.

Since Fraenkel[7] found that some rabbits copulate while pregnant, it would be of especial interest to know if supernumerary broods are particularly common in such rabbits and whether supernumerary broods can be produced in mice should comparable conditions obtain. A particularly interesting question would seem to be raised by the occurrence of such cases as reported by Guerra[12] in which a second *implantation* is said to have occurred while a dead fetus still was retained in utero. Under these circumstances the smaller, younger fetus should always be best preserved. Although ovulation and perhaps also menstruation could occur under such circumstances in view of the well known regeneration of the endometrium, possible under these circumstances, one scarcely can regard such a sequence of events as established, at present. However, Franco[10] stated that *there is no lack of cases in which a second pregnancy* occurred under such circumstances.

Sumner quite rightly called attention to the fact that in the great majority of cases of superfetation recorded in man, one or both fetuses were macerated before born, and King concluded that "many cases that have been reported as due to superfetation unquestionably are instances of superfecundation or of blighted ova." Nevertheless, King regarded the case in a sheep reported by Arrowsmith[13] as probably genuine, and added that "although Christopher found that ovulation might occur during pregnancy in the cat, superfetation is not known to occur in this animal." However, Jepson, in 1883, reported such a case, and Harman[5] another. Neither report, however, would seem to bear critical scrutiny, although both are quite as trustworthy as other reports of alleged superfetation. In the case of Harman it would seem more probable that intra-uterine death of one fetus with survival of the other was responsible for the interpretation. It should be recalled that such instances are relatively common in the rat, guinea-pig, rabbit, ferret, marmot, the pig, and in some other mammals. These phenomena have been discussed by Strahl and Henneberg,[14] Henneberg, in 1903, Fraenkel,[15] Koebner,[16] Huber, [17] Mall[18] and Meyer.[19]

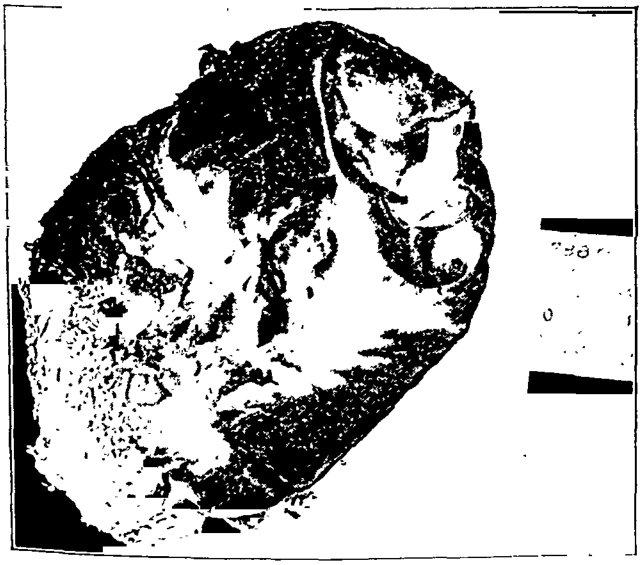

Fig. 6.—Pseudosuperfetus 788 *b* from the Mall Embryological Collection; the small nodule in the shaded area opposite the scale is the fetus; × 1.

As is evident from Figure 1, in which the so-called younger superfetus, reported by Harman in a cat, is contrasted with the normal cat fetus (Fig. 2) of approximately the same length, the latter has a totally different form. The same thing is evident also, although to a lesser degree, on comparing the illustration accompanying Harman's article with one from Kunz,[20] shown in Figure 3. Since the latter, the larger of two macerated apparent superfetuses, in the report of Kunz, was deformed by retention, it may have measured a little more or less—probably more—than 10 mm. at the time of its death. However, even were it a trifle older than the fetus in Figure 2, as its form would seem to suggest, the difference is slight and may be ignored for purposes of comparison. Kunz spoke of the larger fetus shown in Figure 3 as entirely normal, which it apparently was, for the deviations from the normal form (Fig. 2), which the illustration so clearly shows, undoubtedly are due to postmortem, antepartum changes so common in human abortuses. Kunz's conclusion that all three fetuses in his case in the cat resulted from ova which were fertilized approximately at the same time heartily commends itself. Kunz further concluded that these specimens furnish no evidence for the occurrence of superfetation, in spite of the fact that two smaller macerated distorted fetuses, which were *only* 9 and 10 mm. long, accompanied a nearly full-term fetus.

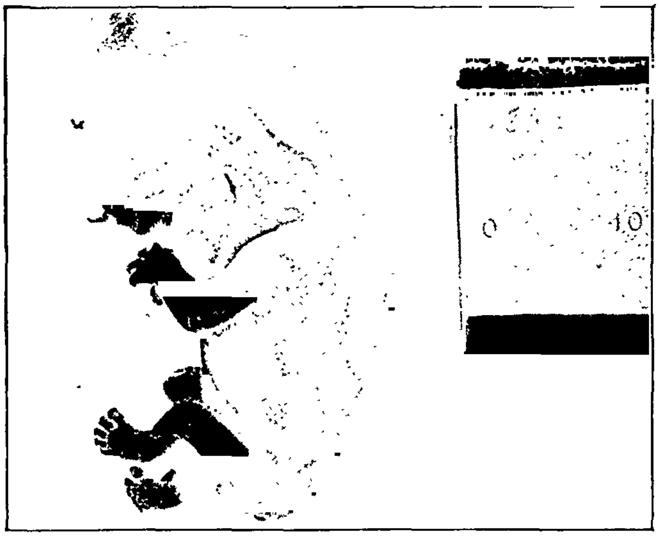

Fig. 7.—Similar specimen, No. 1840 *a*; × 1.7; only slight maceration is present.

Harman[5] also reported a case in the cow which, however, she regarded merely as one of "probable superfetation." Unfortunately this report rests very largely on the statement of a veterinarian, who made no further examination of the specimen. Hence it

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[12] Guerra: Un caso di superfetazione, L'arte ostetrica **15**, 1909.

[13] Arrowsmith, R.: Superfetation (?) in the Sheep, London M. Gaz. **14**, 1834.

[14] Strahl, H., and Henneberg, B.: Ueber Rückbildungserscheinungen am graviden Säugetieruterus, Anat. Anz. **20**, **21**, 1902.

[15] Fraenkel, L.: Die Function des Corpus luteum, Arch. f. Gynäk. **68**, 1903.

[16] Koebner: Knochenresorption bei intra-uterinem Eischwund, Arch. f. Gynäk. **91**, 1910.

[17] Huber, G. C.: 1915 The Development of the Albino Rat Mus Norvegicus Albinus, II, Abnormal Ova; End of the First to the End of the Ninth Day, Wistar Institute of Anatomy and Biology, Philadelphia.

[18] Mall, F. P.: On the Fate of the Embryo in Tubal Pregnancy, Contributions to Embryology, Vol. I, No. 1, Washington, D. C., 1915.

[19] Meyer, A. W.: Intra-Uterine Absorption of Ova, Anat. Rec. **12**, 1917.

[20] Kunz, Albert: A Note on Superfetation, Interstate M. J. **23**, 1916.